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Instructional methods and media : issues surrounding the open colleges of Korea.

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INSTRUCTIONAL METHODS AND MEDIA:

ISSUES SURROUNDING THE OPEN COLLEGES OF KOREA

A Dissertation Presented

By

KYUNG JAE PARK

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DEDICATION

To those who empower people to live joyous, humane, and meaningful lives through education.

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There are many people who helped me complete this study. While it is difficult to acknowledge all of them, a number of individuals and groups of people deserve special credit for their assistance.

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ABSTRACT

INSTRUCTIONAL METHODS AND MEDIA:

ISSUES SURROUNDING THE OPEN COLLEGES OF KOREA

MAY 1986

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The development of an open learning system as an alternative to formal, full-time study enables a broad cross-section of the adult population to compensate for missed educational opportunities and to acquire new skills and qualifications for career changes. Through the use of modern communications technology, the open learning system can reach more people more effectively. One of the most important tasks facing an open learning institution, therefore, is to develop an appropriate instructional system which employs such modern communications technology.

This study examines issues surrounding the development of instructional methods and media in the open colleges of Korea. The study focuses mainly on identifying: (1) the problems and constraints

working people perceive in continuing their education at an open college; and (2) the needs of Korea's open college staff for developing appropriate instructional methods and media.

The methodology of the study consists of a comprehensive review of literature, two case studies, a survey of students, and a needs assessment. The review of literature explores the nature of open learning, its strengths, weaknesses, and potentials as an alternative to formal, full-time study at the post-secondary level. Also examined are the didactic possibilities and limitations of major instructional methods and media currently or soon to be used in open learning. The case studies inquire into the practical issues and implications for developing an appropriate instructional system.

The survey of open college students explores those problems and constraints they encounter in continuing their education, which should be considered in developing instructional methods and media. The needs assessment identifies the needs of open college staffs for resources which are necessary for the development of instructional methods and media that would be appropriate for their students. The study concludes by addressing several recommendations for the development of open colleges in Korea, especially the development of their instructional system.

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Statement of the Problem

For hundreds of years education has been basically a face-to-face relationship between teacher and students. Schools, where one educated person can teach thirty, fifty, or more, have been the most convenient way of providing education to children. Parents throughout the world have viewed formal education of this type as a route to socio-economic advancement and mastery of twentieth-century technology, even though only a few students successfully work their way through the educational system.

Today the demand for school places is beginning to outstrip the capacity of many economies to supply them. A growing egalitarianism has created demands for more educational opportunities for all people, no matter what their situation. At the same time, technical changes in every field of human life mean that increasing numbers of people in this complex and ever-changing world has a need and right to learn throughout one's life. The idea of schooling, which has been linked to the discrete time-place education, is being supplemented by the concept of lifelong learning with fewer place-time barriers, motivated by the changing and maturing needs of more responsible and self-directed learners. These demands put a strain on the more traditional educational systems and have led to a search for alternative ways of

education that can reach more people more effectively.

The development of open learning systems offers some possibilities to address this problem. As an alternative to formal, full-time study, it enables wide sections of adult populations to compensate for lost opportunities of education in the past and to acquire new skills and qualifications for career and job changes. The success of the Open University in the United Kingdom has given a substantial impetus to the development of open learning systems throughout the world. Many countries in both the developed and developing world have established open and distance learning institutions since the inception of the British Open University in 1969. For the most part, they provide educational opportunities to those excluded from conventional education for various reasons. Those institutions have experimented with open admission and other open administrative policies, and devised new methods of reaching more learners and of satisfying special groups in need of additional training and education. Although there is great diversity among these institutions, one common element is the use of communications technology to deliver instruction to their students.

There has been a continuous, extensive, and growing relationship between developments in communications technology and education. These developments have been one of the major catalyzing influences on education. Communications media are fast leveling what were formerly insuperable barriers to adult participation in organized study programs: space, time, and methodology. They promise to individualize the exchange of information and instruction for people who cannot interact

with teachers or others on a person-to-person basis. At the present time, by networking video, telephone, interactive audio, and computer, educators can design systems that deliver education and training to adults at a distance while simultaneously meeting individual needs. They hold great promise of markedly expanded access to educational and training opportunities for all adults, whether they are in search of basic literacy and coping skills, occupational improvement, or formal higher education.

While there are many ways of designing instruction with the use of new communications technology, the processes and promises of these technologies can also be confounding. Different methods and techniques have differing capabilities and constraints in accomplishing specific educational objectives. The use of communications technology in the education of adults depends on the suitability of the instructional methods and materials designed by an institution. Research is needed in order to understand the reciprocal relationship between the communications technology and the shape and delivery of instruction as well as to develop appropriate instructional methods and media.

The concept of open learning was introduced into Korean society in 1972 when the Korea Air and Correspondence College was established for the purpose of providing the opportunity for higher education to those denied it in their youth. The Korea Air and Correspondence College offers courses mainly in the social science fields. It employs correspondence education and radio broadcast as its major instructional methods. In spite of the conservative attitude of those Koreans who

prefer formal education, the College has established itself as an important provider of higher and continuing education to the Korean people.

Because of the success of this College, since 1982 the Korean Government has replaced a number of junior colleges with open colleges. The main purpose of these colleges is to provide technical and vocational higher education to the working people, most of whom perceive distance and time as major obstacles to their participation in conventional study programs. To date, however, open colleges manifest few differences from traditional colleges and universities. No instructional method other than face-to-face teaching has been developed. This situation poses serious problems for the development and spread of open colleges in Korea. To reach large numbers of working people through the extension of education and training, there is a need to develop various and appropriate instructional methods and media. In other words, one of the most urgent tasks for Korean open colleges is to remove long-standing barriers against the efforts of working people to continue their education. To do otherwise by duplicating their heavy dependence on face-to-face on campus teaching methods, these colleges would become similar to conventional colleges for the young and privileged. In short, these open colleges cannot successfully perform their function without developing alternative instructional methods and media appropriate for their students.

Purpose of the Study

The study proposed here seeks to describe the reciprocal relationship between the communications technology and the shape and delivery of instruction, and to identify those issues that should be considered in developing instructional methods and media to meet the needs of Korea's new open colleges. In addressing this purpose, the study will examine the following primary question:

What are the issues, problems, and possible approaches which surround the open learning context that should be considered in developing instructional methods and media appropriate for Korean open colleges?

To answer this question the study will investigate the following implementing questions:

1. What is the nature of open learning as an alternative to formal, full-time study at the post-secondary level?
2. What are the didactic potentials and limitations of the major instructional methods and media currently or soon to be used in open learning?
3. What implications can be derived from the experiences of selected open learning institutions as to the practical issues involved in developing instructional methods and media?
4. Why have the open colleges been developed in Korea and what is their current status?

5. What are the central problems and constraints perceived by the students that should be considered in developing instructional methods and media for Korean open colleges?
6. What resources are needed by the staffs of Korea's open colleges in order to develop appropriate instructional methods and media as defined by the academic and administrative staff of those colleges?
7. What recommendations can be made to assist the development of open colleges in Korea?

Significance of the Study

This study deals with how the shape and delivery of instruction for Korean open colleges can be improved so as to extend educational opportunities to more working people. The study focuses mainly on identifying: (1) the problems and constraints working adults have in continuing their education at an open college; and (2) the needs of Korean open colleges for developing instructional methods and media appropriate for their students. The primary significance of the study lies in the fact that the recommendations suggested will be based on a very pragmatic and need-oriented consideration. The approach outlined in this study, while not in the form of a ready-made tool, is intended to have significant impact on the development of open learning in Korea.

The findings and conclusions of this study will be useful in several ways. They will shed new light on the factors which affect the choice and development of instructional methods and media of an open learning institution. They may also provoke discussions of potential relevance to future research among educators and planners involved in

open learning. Although some of its findings would not be relevant to many other settings, the study's philosophic base, rationale, and methodology will be useful in guiding further research in this field.

Review of Literature

The review of literature provides the theoretical framework for this study. The review has been done in two phases. In the first phase, the study explores the nature of open learning in order to understand more about its strengths, weaknesses, and potential as an alternative to formal, full-time study at the post-secondary level. The role of adult education and open learning in society is also examined. This theoretical foundation acquaints the reader with important concepts which are essential to the understanding of the nature of open learning.

This examination leads to the second phase of the literature review, an investigation of the didactic potentials and limitations of the major instructional methods and media currently or soon to be used in open learning. Their didactic potentials and limitations are examined both in terms of their learning effects and educational objectives. This phase also includes two case studies: the Open University in the United Kingdom and Holyoke Community College in the United States of America. Both are examined with a view to study substantive issues related to the development of instructional methods and media.

A bibliography of the sources which have been used for this study is attached.

Design of the Study - Methodology

This study is designed to explore ways to develop instructional methods and media appropriate for Korean open colleges. Toward this end, the study has been organized in several sequential stages. First, a conceptual analysis of the major themes which surround open learning is presented in the form of a theoretical framework. This seems important as this framework provides the theoretical and analytical basis for the study. Second, an extensive survey of the literature examines the didactic potentials of major instructional methods and media in open learning. Third, the study examines two case studies: the Open University in the United Kingdom and Holyoke Community College in the United States of America. The focus of the examination is on their overall administrative structures and instructional delivery systems. The next phase involves the analysis of the specific case chosen for this study - the open colleges in Korea. The analysis is done through a systematic examination of the available documentation, published books, research reports, and the personal experience of the researcher with these colleges.

The next step of the study involves the identification of the problems and constraints encountered by the students of Korea's open colleges in continuing their education and the needs of the colleges' staffs for developing instructional methods and media appropriate for their students. This is an important phase of the study since it provides an empirical knowledge and data base for developing useful recommendations in designing instructional modes for the open colleges.

The base has been developed through the administration of a questionnaire and the application of the Coffing/Hutchinson Needs Analysis Methodology.

The concluding chapter weaves together the main themes and conclusions of the study, and addresses recommendations useful for Korean open colleges in developing instructional methods and media, taking the study's prior analyses as the frame of reference.

Field Investigation

Increasingly, questions are being raised concerning traditional experimental research models in educational research. Those research designs are prediction-oriented. They attempt to control certain variables which operate freely in learning environments. It, therefore, can be argued that their findings are not generalizable to the real world in which the experiment occurs. Thus, many educators are now using a more decision-oriented research model. A decision-oriented research model is descriptive, delimited, and attempts to find out what and how, rather than why. This study focuses on data gathering for decision-making.

The field investigation of this study was conducted in two major phases. The first phase is the identification of the problems of the open colleges' instructional systems as perceived by the students of six Korean open colleges and the identification of the constraints they have in participating and continuing their education in these colleges. A comprehensive questionnaire was developed to obtain information on problems and constraints the students perceive in the instructional

methods and media employed by their colleges. It is based on the theme gleaned from the previous literature review and from the researcher's own experience with those colleges. Efforts have been made to design the questionnaire in a manner that is clear, unambiguous, and unthreatening so as to yield accurate and useful information in an easily recorded form. Since it would be impractical to seek input from every student of six Korean open colleges, fifty students were selected at random from each college.

Two instruments were employed in the pilot study to develop the categories for the multiple-choice items which are included in the final form of the questionnaire. One instrument is a questionnaire composed of a number of open questions, which was administered to a number of students (see Appendix A). Their responses were used to determine the multiple-choice categories necessary to make the questionnaire content more salient to the respondents. Salience of the questionnaire content to the respondents is not only necessary to obtain accurate information, but also to encourage a more positive response rate (Borg & Gall, 1983). The other instrument is a semi-structured group interview with some open questions included in the above questionnaire (see Appendix B). The semi-structured interview with its open questions encourages spontaneity and at the same time circumscribes the topic more than the completely open interview. The group interview minimizes the influence of the interviewer, establishes group dynamics, and thus is more likely to generate new ideas. The final questionnaire is a closed questionnaire (see Appendix C).

The next phase of the field investigation is the assessment of the staff needs of Korean open colleges for the resources which are necessary to develop appropriate instructional methods and media. The short version of the Coffing/Hutchinson Needs Analysis Methodology (see Appendix D) was used to conduct the needs assessment after adapting it to Korean situation. Participants in the needs assessment were the presidents and a selected sample of the academic and administrative staffs of the six Korean open colleges. The needs statement which was used throughout the assessment is as follows:

> "The needs of Korea's open college staffs for resources necessary to develop instructional methods and media appropriate for their students as defined by presidents, professors, and administrative staffs of Korean open colleges."

The hypothetical situation used as appropriate for stimulating greater involvement of the participants as recommended by the Methodology is as follows:

> "Imagine that your college is developing various instructional methods and media which are most appropriate for the students of your college and can meet their individual needs, and that in this situation your college staffs' needs for resources necessary for developing those instructional methods and media are being fulfilled. As you observe this situation in your mind, what are all the things you see that indicate to you that your college staffs' needs for resources are being fully met?"

Data Analysis

The data from the questionnaire, which are categorical, are summarized by creating frequency distributions. The frequency counts are then converted to percentages which readily show the most frequently occurring category. Chi square(χ^2), a nonparametric statistical test, is used to examine whether there is any significant difference between, for instance, sex or occupation groups.

As for the needs assessment, a survey instrument was designed to prioritize the needs based on the responses from the participants in this assessment. The researcher has taken the top-ranking fourteen needs components as those which should be given due consideration in developing instructional methods and media appropriate for Korea's open colleges.

Assumptions of the Study

Four basic assumptions underlie this study:

1. Providing and suggesting some effective recommendations for developing instructional methods and media can be an important step towards the development of open learning.
2. Instructional methods and media are one of the most important components of an open learning institution.
3. It is possible for Korean open colleges to develop varied kinds of instructional methods and media.
4. The Korean Government is going to replace more junior colleges with open colleges in the future.

Limitations of the Study

1. This is an analytical study which produces information needed to make recommendations for developing instructional methods and media for an open learning institution. This study neither attempts to design an entire developmental model, nor elaborates the details of developing an instructional system.
2. The usefulness of the study depends significantly on the individual needs assessment carried out at selected sites and with selected clients. The fact that participants in other environments would be different from those of this study could modify the recommendations.
3. The particular cultural setting of the study might possibly impose constraints with respect to the generalizability of this study.

Definition of Terms

To facilitate the reader's clarity, the terms used throughout the study are defined as follows:

Open learning: Understood here as a philosophical rather than an administrative position, describing, for instance, colleges which have adopted open admission and other open administrative policies, and have devised new methods for reaching more learners and satisfying special groups in need of additional training and education.

Instructional method: A way of organizing a learning situation in order to achieve a particular learning objective.

Instructional medium: A system of communication to deliver instruction to learners.

C H A P T E R II

OPEN LEARNING: ALTERNATIVE ACCESS TO EDUCATION

Introduction

One of the most important functions of open learning is to provide educational opportunities for those denied conventional education for various reasons. Open learning aims to help redress social or educational inequality by providing alternative access to education. If the human condition can be improved through learning, then access to education at all levels must be open to all people.

The purpose of this chapter is to explore the nature of open learning in order to understand more about its strengths, its weaknesses, and its potential as an alternative to formal, full-time study in post-secondary education. Open learning is examined in a historical perspective. The meaning of open learning and other related terms is discussed. Characteristics of open learning are analyzed in terms of a number of delivery variables. The role of open learning in society is discussed. Finally, some of the general problems of open learning are pointed out in order to clearly understand the nature of open learning.

Origins of Open Learning

The adjective open was not formally applied to any school or university until 1969, when Queen Elizabeth II granted a charter to the British Open University (Wedemeyer, 1981). Open learning, however, is

not a new phenomenon, resting as it does on a long history of learning. Wedemeyer (1981) stated the success and recognition of open learning in our times is "a belated recognition of the need for and validity of the non-traditional means of learning that have been in existence for generations" (p. 61).

Kaye (1981a) found the origins of open learning in England in the "historical distinction between teaching and accreditation which was one of the key features of the Oxford and Cambridge system - the colleges taught, the University examined" (p. 15). For example, London University was created in 1836 as a body to conduct examinations and award degrees without having teaching functions, and by 1858 its degrees were open to any candidate from any part of the world who could pass the tests (Kaye, 1981a; MacKenzie et al., 1975; Rumble & Keegan, 1982).

In the United States of America (U. S. A.), open learning dates back to the 1860s, during which the Morrill Act was passed and the university extension movement began with the foundation of the land grant universities (Rumble & Keegan, 1982; Wedemeyer, 1982, 1983). These universities institutionalized the various programs which libraries, churches, informal study groups, and other adult education centers formerly had provided millions of back door learners by opening the door of higher education to them.

Open learning, therefore, is clearly grafted onto the British and American concepts of external degrees and university extension. This may be one of the reasons the open learning phenomenon has won a remarkable degree of acceptance and spread so rapidly despite initial

hostility and contemptuous disregard from many educational institutions and educators.

The Open University in the United Kingdom began teaching students in 1971. Within a few years of the University's establishment in the United Kingdom, a number of open or distance universities have been founded in both developed and developing countries. The spread of these universities stemmed as much from an increased concern for greater equality of opportunity for higher education, as it did from the success of the British Open University. This concern led not only to the expansion of conventional universities to provide more places for school leavers, but also to the notion that higher education should be made available to those people who had missed the opportunity to attend a university in the past. Coupled with this concern was an increasing belief, particularly in the 1970s, in the need for people to have access to educational opportunities throughout their lives in order to renew or update their knowledge and skills.

Concepts and Definitions

The Concept of Openness

The term open has many meanings. To be open is not to be closed, restricted, prejudiced, or clogged; but to be free, above board, flexible, or future-oriented. MacKenzie et al. (1975) described well the meaning of the term open:

> 'Open' as contrasted with 'closed' carried such suggestions of the lessening or removal of restrictions, of exclusions and of privilege; of demolishing or lowering established barriers between subject areas; of enlarging and enriching the areas of activity and experience graded as educational. (p. 15)

Walker (1973, 1975) developed the concept of openness by inverting the traits and characteristics of conventional higher education: restrictive access to education which is highly selective and, thus, leading to social inequalities; restrictive structures which grade and direct learning by uniform pacing, allowing limited room for individual needs and expression of abilities; and restrictive learning environments which employ only face-to-face teaching in classrooms and lecture halls. Inversion of these traditional traits results in an approach to education which is open to all people, including those without formal entry qualifications; is based on the individual student's needs and expectations; and employs various instructional methods utilizing the wide range of resources existing within the community (Walker, 1973, 1975).

The idea of openness was more clearly expressed in the inaugural address of the first Chancellor of the British Open University, Lord Crowther, when he received the Royal Charter in 1969. He stated that the University would be open "as to people" (open entry); "as to places" (no campus); "as to methods" (the use of any communication medium that promoted its educational purposes); and "as to ideas" (in that it would be concerned not only with necessary skills and experience, but with all that human understanding can encompass) (MacKenzie et al., 1975, p. 16; Tunstall, 1974, p. x).

Generally, the concept of openness is understood as open access to educational opportunities. It implies the rights of individual people to education and the responsibilities of societies to provide

appropriate opportunities to their people. Distance and other geographical constraints, ability to have access to delivery media, and lack of money are all the factors which should be considered in this context (Neil, 1981).

Towards a Definition of Open Learning

Open learning lends itself to a variety of interpretations. The term open has been given to so many educational programs that it is difficult to find a common definition that will describe all the different enterprises that use the term. MacKenzie et al. (1975) described well the difficulty of defining open learning by saying that "open learning is an imprecise phrase to which a range of meanings can be, and is, attached. It eludes definition" (p. 15). They adopted the following working criteria in their work, Open Learning: Systems and Problems in Post-Secondary Education, for identifying institutions relevant to their purpose:

> Students not adequately catered for at the present time for some reason or other (e.g., remoteness, disadvantage).
> Courses outside full-time formal education, but related to some important national purpose and having a substantial following.
> Learning systems having some element of 'newness' whether in curriculum, organization, course development and delivery, assessment or support (as group study).
> Attainment leading to some recognized qualification.
> Efficacy, attempting some form of assessment beyond the gaining of a bachelor degree or certificate. (1975, p. 18)

They concluded that "open learning may properly be considered as a new movement in educational ideas", akin to "the developing concern with continuing education, variously expressed as éducation permanente or 'lifelong education'" (1975, p. 90).

Wedemeyer (1981) gave a definition of open learning which is pertinent to the concept of openness discussed in the previous section:

> It means providing part-time learning opportunities for learners at a distance, who operate with a degree of autonomy and self-direction, but with open mediated access to learning without conventional prerequisites for acceptance or accreditation. (p. xxvi)

He saw open learning as "a continuum of access and opportunities" (1981, p. 61), which is not enclosed or encumbered by barriers, but is accessible and available.

Many writers see open learning as a philosophical rather than an administrative position (Ahmadi, 1976; Lord, 1976; Keegan, 1983). Keegan (1983) stated that:

> 'Open learning' is a term that is not to be used in an administrative context; rather its context is philosophical to describe, for instance, colleges with 'open' administration policies.... (p. 24)

Lord (1976) said that open learning represents three shifts: a shift "from teacher based education to learner based education"; a shift "from school based education to environment based education; and a shift "from the passive learning process (I am taught) to a more active mode (I learn, I teach, I teach myself)" (p. 13).

Open learning as a philosophical position is clearly expressed in a paper by A. Ahmadi presented at the Latin-American and Caribbean Meeting on New Forms of Post-Secondary Education in 1976:

> I believe that what makes a university qualify as an open learning system is its goals and philosophy towards education, and not the mechanisms utilized for learning or delivering knowledge. So an institution of learning qualifies as an open education system if the goals of the institution are to democratize the process of

> education and to be responsive to the changing needs of the society.... By democratization of education, I mean educating those who are able and willing, and want to learn. Society is not responsible for educating every citizen; rather every citizen has a responsibility to society to educate himself. This concept of open learning in an appropriate one. (pp. 5-6)

In this study, open learning is understood as a philosophical position, describing, for instance, colleges which have adopted open admission and other open administrative policies, and employed various instructional methods and media. However, this concept of open learning does not conflict with those suggested by MacKenzie et al. (1975) or Wedemeyer (1981). There is a common thread running through all these views which emphasizes open access to education, puts a new faith in the learners and their capacity for learning on their own, and is, to a greater or lesser extent, related to the efforts to expand the freedom of learners in admissions, selection of learning objectives, time and place for study, and evaluation. In this sense, open learning can also be seen as a composite of several variables, each of which is a continuum of less formal to more formal.

Programs with Some Similarities to Open Learning

There are certain forms of education which have some similarities to open learning but are not identical with it. Three of the most important are presented here for consideration: non-traditional learning, distance education, and independent learning. These terms are often used interchangeably with open learning and thus need some clarification.

Non-traditional learning. This term came into use in 1971 when the Commission on Non-Traditional Study was created in the U. S. A. Referred to more as an attitude toward learning than as a system by the Commission (1973), it encompasses a broad and diverse range of educational programs. At one end is learning undertaken with learners' complete autonomy and independence; at the other is learning undertaken under the auspices and supervision of a formally recognized educational institution but significantly different from other formal educational efforts (Harnett, 1972; Wedemeyer, 1981). Such learning employs non-traditional methods that afford educational opportunity and access irrespective of learner location and situation; concentrates on students' own needs; and deemphasizes time, space, and even course requirements in favor of competence and performance (Commission on Non-Traditional Study, 1973). In this respect, Wedemeyer (1981) regarded distance, correspondence and open learning as a form of non-traditional learning. However, non-traditional learning is a vague, generalized term which is more widely used in the U. S. A. than elsewhere, while open learning is at present used worldwide.

Distance education. This term describes educational programs in which learner and teacher are at a physical distance from each other. In addition to the separation of learner and teacher, it has the following characteristics:

- the influence of an educational organization which distinguishes it from private study;
- the use of technical media, usually print, to unite teacher and learner and carry the educational content;
- the provision of two-way communication so that the student may benefit from or even initiate dialogue;

> - the possibility of occasional meetings for both didactic and socialization purposes;
> - the participation in an industrialized form of education which, if accepted, contains the genus of radical separation of distance education from other forms. (Keegan, 1983, p. 30)

Open learning has usually been associated with distance education. Many open learning institutions employ primarily distance learning methods. And many educational projects indiscriminately use the names distance or open without consideration of their objectives, goals and media. However, as a strategy open learning is opposed to traditional education, and is particularly characterized by the removal of restrictions, exclusions, and privileges; while the only difference distance education has from conventional universities is the mode of delivery of learning to those who might have been instructed in regular universities.

Independent learning. Another kind of learning activities that has many features common with open learning is called independent learning. It is defined by Gleason (1967) as:

> instructional systems that ... make it possible for the learner to pursue the study of personally significant areas in an independent manner - freed of bonds of time, space, and prescription usually imposed by conventional instruction. (p. v)

Both open and independent learning stress self-directed learning based on the learner's own needs and free of the time and place variables of study. There are many common elements of a philosophy of educational maturity in both terms. However, independent learning in the U. S. A., where it is most preferred, usually means an individual

study program set up on a contract basis between a student and a faculty member, which is only one mode of open learning.

Factors Leading to the Establishment of Open Learning Systems

The trend towards open forms of learning cannot be separated from the efforts of our times to provide educational opportunities for those neglected by the traditional institutions. However, the open learning trend is also related to a number of other phenomena - social, economic, political, technological, demographic, and educational. The three most important factors which have led to decisions by governments and public education authorities to establish open learning institutions are considered here.

Disillusionment about Formal Education

Most open learning institutions respond not only to needs arising from social and economic change, but also reflect a prevalent disillusionment about formal education. Kohl (1970) and Holt (1969), while writing with some anguish about the constraints of conventional education, also strove to reform the institution to make it more interactive with its community. Goodman (1971) and Reimer (1971) insisted that the school in itself is miseducative and must be replaced by freer contexts for learning. Both Illich (1970) and Freire (1970) imputed to the school the positive and anti-educational function of maintaining the oppressive social stability of a class-structured society and called for learning strategies that will liberate the oppressed. Finally, those who speak of the Crisis in Education are mostly concerned with the problem of financing the expansion of formal

education to serve the educational needs of all people at all levels, and with the problem of making formal education more responsive to the social, economic, political, and technological changes in the world (Coombs, 1968).

This kind of concern and disillusionment about formal, full-time study is not only at the primary and secondary levels. In post-secondary education, vocal discontent and alienation among students are commonly encountered, particularly in the western world (MacKenzie et al., 1975). Demands for relevance, for relaxation of authority, for reform of curricula and examination systems are all too familiar to traditional universities. Large numbers of adults have had to close their minds to any further conventional education. It is to these attitudes that many open learning institutions pay particular attention. By offering part-time study, free of the place and time constraints of conventional education, to adults with other responsibilities, these institutions aim at enlarging access to learning. One important objective of the British Open University is to provide the opportunity of higher education to a pool of adults who are capable of higher studies but have been denied for reasons of the highly selective system of traditional universities or for other reasons (Perry, 1978).

The Changing Concept of Education

A changing concept of education has stimulated demand for open learning. There has been a growing conviction that education is not only meant for a privileged group in a society, or to be confined to childhood and adolescence, but that all people should have the

opportunity to the extent and kind of education their full development requires, and that education should be a continuous process throughout one's life (Darkenwald & Merriam, 1982; Erdos, 1975).

Lifelong learning, as recommended by UNESCO (Faure et al., 1972), is now the concept which guides educational policies for both developed and developing countries, and the societal imperative of lifespan access to learning for all people requires institutions characterized by openness. The concept of open learning is surely based on the idea that education is a lifelong process that is not confined to one's youth or to classrooms and is equally accessible to all people who wish to learn (Cross & Valley, 1975).

The Impact of Communications Technology

The relationship between developments in communications technology and education has been extensive and continuous since the invention of printing. These developments have been one of the major catalyzing influences upon education (MacKenzie et al., 1975). Advances in the equipment (hardware) and associated learning materials (software) have transformed, and are continuing to transform, ways in which we communicate with each other. All these advances in rapid and effective communications have made it possible to communicate across distances and overcome ancient restrictions to access derived from the space-time perception of learning (Wedemeyer, 1981). Different ways of designing instruction with the use of new technology enable educational institutions to reach a greater number of students who are

geographically dispersed and enable them to learn at a distance according to their own needs and situations.

Delivery Variables of Open Learning

Every educational approach has a delivery system which consists of a number of delivery variables. Variables to be considered include the nature of objectives, characteristics of learners, content and nature of curricula, teaching and learning approaches, instructional methods and media, evaluation and rewards, organizational patterns, and various resources available (Frith & Reed, 1982; Reed & Loughran, 1984). The specific characteristics of these variables serve to distinguish open learning from other approaches, especially from conventional education, and variation in any of these variables may substantially change the total impact of an open learning system.

Objectives

The preceding discussions provide an indication of the nature of the objectives of open learning. The objectives of open learning are functional, learner-centered, and more directly related to the real life of learners than those of conventional education, which is characterized as symbolic, institution-centered, and not directly related to the daily lives of students.

Open learning emphasizes the functional learning which is based upon the needs and demands of learners. Through the provision of learning closely related to their social and work situation, open learning contributes to their individual development. It also contributes to social mobility (McIntosh et al., 1976). By offering

alternative opportunities for higher education to those who, for any reason, have been or are being excluded from attending existing institutions, it aims at bringing about a change in the social order.

The objectives of many open learning institutions in developing countries are also community, that is, nation, oriented. They aim at providing experienced manpower and professional expertise in areas where there are acute shortages of personnel necessary for national development (Harry, 1981).

Learners

Learners of open learning at the post-secondary level vary considerably in age, most being between 20 and 40. The majority are in full-time work. Although there are large numbers of young students, most learners are adults for whom education must take second or third place behind home and work commitments (Sewart et al., 1983). Therefore, most study on a part-time basis primarily at home.

Many open learning systems are designed to serve previously under-represented groups of people (Feasley, 1983). For most of them open learning is the only form of education which enables them to earn while studying. Therefore, a high level of motivation among them is the general rule.

Curriculum

The curriculum content of an open learning system is generally determined by the needs and resources of a society, and more directly by the type of learners and their needs, the educational media available, and the financial constraints peculiar to open learning and to the

system. In the Western World, open learning has been employed as an alternative to reach people outside the conventional educational structures through the media to which they have access in their home or in easily accessible off-campus sites. In the Socialist Bloc, focus is on improving industrial production, and, consequently, open learning is closely related to work. In the Third World, open learning is an adjunct of traditional education, and is aimed at people who were never part of the educational mainstream. The emphasis is on helping them catch up and learn skills for their everyday life.

Today, there is growing consensus among adult educators that adult interest in discipline-based curricula is lessening in favor of stronger interest in professional and vocational training (Zigerell, 1984). Even the Open University in the United Kingdom, which, since its inception, has been primarily concerned with degree-oriented and general education curricula, is beginning to concentrate more on vocational courses.

The design of curricula for mature students should take account of their life experience and their personal situation. The courses should also be suitable for both part-time and intermittent students.

Open learning systems offer arts subjects more commonly than they do science subjects. Many open learning institutions are opposed to the teaching of science by correspondence. The institutions that include science in their curriculum have had to use such special resources as compulsory vacation courses, local laboratories, study groups, audio or video tapes, and home kits for experiments (MacKenzie et al., 1975).

Teaching and Learning Approaches

The characteristics of learners and the curricula of open learning discussed in the preceding sections obviously demand teaching-learning approaches different from those of conventional education. Learners take a more active role in diagnosing their learning needs, formulating learning goals, identifying learning resources, and evaluating learning outcomes. The teacher becomes a facilitator and co-participant in planning and designing students' learning experience.

Learning takes place in a highly individualized form and tends to be task or problem-centered rather than subject-centered. Knowles (1975) called this kind of learning process andragogical or self-directed learning as opposed to pedagogical or teacher-directed learning. Open learning is one of the areas of education where Knowles' andragogy, the art of science of helping adults learn (Knowles, 1970), should be and is applied.

Instructional Methods and Media

There is a very wide range of instructional methods and media available in open learning. Broadly classified, they fall into the following groupings:

- Printed material: Specially written correspondence texts and textbook; reading guides and bibliographies; notes on broadcasts; assignments; instructions for the use of scientific kits.
- Audio-visual material other than print: Slides, filmstrips, film loops, and film; audio and video tapes; radio and television broadcasts.
- Practical activities: The use of home science kits; directed work in local laboratories; research activities or fieldwork in students' locality; use of computer facilities.
- Face-to-face teaching and other interpersonal activities: Counselling on the choice of courses and methods of study, etc.; study by correspondence including communication by telephone; local

> tutorial classes, seminars, and lectures by tutors; self-help or discussion groups; attendance at short residential courses; internships; directed travel. (Kaye, 1981c, pp. 51-55; MacKenzie et al., 1975, pp. 56-57)

In most open learning projects of distance learning, print is the prime medium in terms of the proportion of course material and students' study time. Broadcast and other audio-visual media are generally used to support print. Practical work is essential for certain science and technology courses. Interpersonal activities need to be carefully thought out to cover the objectives for which they are best suited.

Each medium has its own advantages and disadvantages. There is no standard or ideal combination. Some systems make no use of radio or television broadcasts. Some dispense with face-to-face teaching. Pedagogical quality of each medium, students' access to the medium, resources available, learning goals, characteristics of students, and the role and ability of faculty and staff in the use of the medium, all these factors should be carefully considered in the choice of appropriate instructional methods and media.

Evaluation and Rewards

There is a strong tendency for open learning institutions to adopt a conventional final examination at the end of a course. Even when the examination is intended solely for distant, part-time students, it is usually designed to be comparable to that of similar full-time students. Conners (1981) explained the reason in relation to the credibility problem:

> Teachers, students, future employers and the nation in general all need to be reassured to some extent that the end product of a

> distance-education system has been exposed to the same quality-control procedures (however imperfect) that are used elsewhere. (p. 164)

Open learning students, most of whom are not used to or have previously been unsuccessful in the traditional education system, are likely to be particularly troubled by this kind of evaluation. They will see it as a threat to their legitimate goals. The pursuit of their own special interests will be inhibited by the fear of examinations. To solve this problem, many open learning systems make use of informal self-assessment techniques that are contained in the students' learning materials and a number of intermittent assessments by local tutors. All these assessments compose a part of final grading and provide useful information about student progress.

Most students pursue a formal qualification such as a degree in order to seek advancement or a better job, while others want to gain new skills created by a technological advance or the skills associated with home or public affairs.

Organization and Decision Making

The organization and decision making process in open learning universities is very different from those of conventional universities. In conventional universities decision making takes place within the departmental structure. The individual faculty member has almost complete autonomy regarding what he does in the classroom. Decisions rarely affect the system as a whole.

In open learning institutions, however, the process of course design, production, distribution, and tuition require the integration of various specialists, all of whose work contribute towards the teaching of students who are widely dispersed. Various strategies for enabling the cross-functional integration of the work of various persons, both academic and nonacademic, are suggested, such as project teams, working groups, special committees with responsibility for coordinating activities across organizational boundaries, etc. (Rumble, 1981a). Decision making in open learning universities, therefore, tends to be more centralized and bureaucratic than in conventional universities.

Staff

The staff of an open learning institution is much more diverse than that of a conventional university. In addition to the academic and usual administrative staff, there is a particular need for a number of specialists in curriculum development, production of course materials, test and measurement, audio-visuals, and sometimes in the production of broadcasts. There are also many part-time tutorial and counselling staff, most of whom are full-time staff members of other universities and educational institutions.

There is a growing interest in developing staff training programs to prepare and upgrade professional competencies in open learning. This interest comes in part from the recognition that open learning is distinct from conventional face-to-face education, and that most faculty members and tutors think of themselves as teachers trained for classroom teaching and are thus less comfortable seeing themselves as facilitators

or resource persons who try to stimulate the learner to solve his own problems (Cochran & Meech, 1982).

Finance and Costs

Most open learning systems are primarily financed by national governments. Students fees are usually much cheaper than in traditional schools.

The cost-effectiveness of open learning has been attested to in the studies by Ansere (1982), Perraton (1982), Laidlaw and Layard (1974), Rumble (1981b), and Wagner (1972, 1977). The common factor pointed out in these studies is the economies of scale which can be reaped by substituting capital for labor. In general, the cost-efficiency of open learning compared to conventional education depends on the number of students in the system, the number of courses offered, and the media selected by the institution (Rumble, 1981b).

Several questions, however, have been raised about the cost-effectiveness of open learning. Carnoy and Levin (1975) argued that the cost savings of an open learning system might be "obliterated by a smaller educational product" (p. 396). Mace (1978) suggested that the economic value of an open university degree to a student will be less than is the case for a conventional university student because of the existence of such powerful institutional forces as internal labor markets, which inhibit the mobility of open university students.

Some of these issues are rightly raised and have yet to be adequately investigated. There seems no doubt, however, that open learning is cost-efficient. That is, it is economical in the use of

resources relative to the output produced. And it must be also remembered that open learning is designed to serve a wholly different group of students and to achieve purposes which would not be achieved at all without it.

Summary

The foregoing descriptions of delivery variables of open learning highlight several characteristics that distinguish open forms of learning from conventional education. The most pervasive are such qualities as flexible, functional, learner-centered, multi-media based, accessible, and cost-effective.

The Role of Open Learning

Discussion of the roles of open learning will necessarily be a part of the larger discussion of the roles of adult education since, as seen before, most of the learners are adults who have left the role of full-time student and assumed the role of worker, spouse, and/or parent. The roles of open learning, therefore, are almost identical with those of adult education. The problem is the degree of implementation in the field of open learning. This section examines the roles of open learning in a society by discussing adult education.

Adult education is a diverse and comprehensive field. It includes a wide variety of educational methods, clientele, and content which are not easily integrated into a single statement that covers the whole enterprise. The goals of adult education also include a wide variety of programs and philosophy. Darkenwald and Merriam (1982) have attempted to analyze the goals of adult education. They concluded that there are

at least five different emphases: the cultivation of the intellect; individual self-actualization; personal and social improvement; social transformation; and organizational effectiveness. These goals include virtually all of what we know as adult education. Using these goals as the basis for examination, the roles of adult education are discussed in the following pages.

Transmission of Knowledge and the Reproduction of Culture

Those who view the purpose of adult education primarily as cultivation of the intellect say that the role of adult education is the transmission of knowledge which is both worthwhile and morally, socially, and politically neutral. They insist that education should be valued for its own sake and considered apart from social goals and social action. Paterson (1979) said that adult education should neither "vindicate the status quo" nor "advocate social change, whether gentle and piecemeal or radical and sweeping" (p. 258). Lawson (1975) also rejected social change as a function of adult education and proposed justifying education as education.

However, the view held by Paterson and Lawson has not been widely accepted, partly because of its claim of neutrality, and partly because of its liberal arts bias. Many writers raise those troubling questions of whether any knowledge can be neutral or value-free, and what is worthwhile and who determines its worthwhileness. Kerr et al. (1973), for instance, argued that industrialization requires an educational system functionally related to the skills and professions imperative to its technology, and that this will result in a technologically oriented

curriculum. The philosopher John Stuart Mill (cited in Lester-Smith, 1966, p. 9) claimed that the content of education is to be found in the culture which each generation purposely gives to those who are to be their successors. Education, then, was regarded as no more than the selection of culture that one generation sought to transmit to the next.

In this context, adult education, including open learning, transmits the dominant culture rather than a neutral one, and in the process it reproduces the cultural system which, in itself, is a force for the retention of the status quo rather than social change.

Individual Advancement and Selection

It has frequently been claimed that education is a vehicle of upward social mobility, but this usually refers to formal education only. However, Goldthorpe (1980) showed that adult vocational education has facilitated the social advancement of those with the motivation during their work life. He reported a number of life histories in which the respondents recorded how they have become more socially mobile as a result of day release and evening studies. Such mobility suggests that there is an openness in the structures of society that allows individuals to penetrate class barriers more easily so long as they have the necessary motivation.

However, Jarvis (1985) pointed out that those who are socially mobile upwards may experience a degree of isolation within their new position in the social structure because they have not necessarily acquired the culture of the class that they have entered. Education, he said, may well be the vehicle of mobility, but unless the people are

able to experience other aspects of the culture, they will not feel integrated into their new position. In this sense, education may be an individuating experience for some people.

While some who have been socially mobile upwards may feel that they have actively utilized the educational system to their own advantage, it may be recognized that the system itself is a part of a selection mechanism (Jarvis, 1985). Indeed, this is a traditional function of formal education. In this way, individual advancement through adult education may be viewed in some instances as a form of co-optation.

Maintenance of the Social System

Parsons (1971) said that there are certain functional prerequisites for the maintenance of the social system: integration, pattern maintenance, goal attainment, and adaptation. Parsons was concerned with how the social system remained an integrated entity. He recognized that formal education has a part to play in this, since it acts as a major socializing agency through which individuals learn how to play the roles that they do in society.

This is even more significant in vocational education, according to Jarvis (1985), because in vocational education some social roles of adulthood are prescribed and taught. Therefore, he said, adult vocational education has an integrating function within the wider society and it helps to maintain the social system.

Yet the social system is not static but dynamic. In other words, society is continually evolving and changing, so that the social system always seeks to establish dynamic equilibrium. Education plays an

important role in this process, too. It adapts to social change and emerging social needs so that it continues to fulfill its function of socializing individuals into the social system. This is especially apparent in the field of adult education. According to the changing conditions of society, new forms of adult education emerge and help individuals perform new roles. In short, adult education is assisting the maintenance of the social system in the process of adaptation to changing conditions.

Provision of Second Chance Education

Adult education, especially open learning, provides second chance opportunities for education to many different people in a variety of ways. In higher education, the opportunity to study for an external degree or to study on a part-time basis is provided through the continuing or further education division of a university or college. When the Open University was established in the United Kingdom, it was widely regarded as the university of the second chance. After that, many countries went on to establish open or distance learning universities to provide second chance higher education to those denied it in the past. This second chance education has enabled adults to acquire the minimum qualifications necessary for attaining an occupation which demands such academic certification.

Another important area of the second chance that adult education provides is adult basic education, wherein many disadvantaged adults are provided with the opportunity to gain skills in literacy and numeracy later in life. For a variety of reasons, this program is one of the

most focused and highly organized adult education efforts in the U. S. A. (Reed, 1984), and in the third world as well.

By offering a second chance, adult education provides individuals with the opportunity to play a role in society different from that for which their initial education prepared them. Even so, it is still a function that reinforces the status quo, and the structures of the social system remain unquestioned. Although the existence of second chance education actually produces more equality of educational opportunity, most adult education programs are not utilized by those who are most in need and, thus, reinforce the existing social structures.

Transformation of the Social System

The central concern of the radical philosophers and educators is the relationship of adult education to society. Their emphasis is on using education to bring about a new social order.

Thomas and Harris-Jenkins (1975) provided a framework for conceptualizing the different philosophical stances with regard to adult education's role in social change: at one extreme is the view that education "must ... challenge established economic, political, and social assumptions" (p. 3); at the other extreme is the desire to preserve inherited cultural traditions and protect the status quo. They labeled these two positions as revolution and conservation. Between these two positions are the less extreme views of reform and maintenance. Writers such as Freire, Illich, and Reimer, who advocate radical social change as the aim of education, fall into Thomas and Harris-Jenkins' category of revolution.

With the exception of Freire, the main concern of radicals has been with public schooling. Many of their criticisms and proposals are applicable to adult education, however, especially given the ever-increasing institutionalization of adult education (Darkenwald & Merriam, 1982).

Freire's (1970, 1973) idea of conscientization refers to the deepening awareness that learners comprehend the socio-cultural reality which shapes their lives and that they have the capacity to change that reality. Through discussion, reflection, and action, individual learning can result in them becoming their own change agents, able to contend with the constraints of the social structure by changing them. For Freire, true education is a liberating process. And whenever education liberates, it results in developing agents who are able to identify and act on opportunities for structural reform. Liberation thus can occur either within the current socio-political context such as in vocational and community educational institutions or outside the context. The ends of the liberation process, however, remain the same: the development of individuals who understand and act on those constraints.

Indeed, it is possible to consider certain forms of learning that result in individuals becoming critically aware thinkers. The more adult education encourages learners to think in a critical manner, the more the potentiality of producing agents for change is increased. Wherever agents who seek structural reform are produced, it might be claimed that education is disfunctional to the existing social system.

In this sense, it is not surprising that in some societies neither the existence nor the growth of this kind of education is encouraged.

Conclusion

The previous section has examined the roles of open learning in society by discussing those of adult education. The differing aims of adult education provide a basis for examining the diverse roles of adult education. Five roles were discussed with their respective views on the relationship between adult education and society.

Clearly, open learning is usually understood as second chance education, and much of the emphasis in open learning is on individual development. While it is possible to consider a form of development that results in the individual being critical of the constraints which the structures of the system impose and in attempts to alter those constraints, there is little that is designed explicitly to encourage learners' attention to addressing the social ills of either the community or the nation.

Criticisms and Problems of Open Learning

Open learning has attracted increasing interest and support from educators and potential learners, especially since the inception of the British Open University. Many countries established open learning institutions to meet the needs and demands for the continuing and higher education of their citizens, based on or copying the British model. However, open learning is by no means a panacea for the national educational problems that some of its supporters would like to believe. It has also encountered much opposition and criticisms, particularly

from the academic staff, planners, and administrators of traditional institutions. The grounds cited most often are:

> - The achievements of open learning systems could only be inferior and second best to those of conventional systems.
> - Open learning inevitably leads to a reduction in academic standards in the subjects dealt with and in the quality of the teaching.
> - Certain subjects and disciplines, anyway, cannot be learned satisfactorily through open learning (e.g., medicine, science, technology, engineering).
> - In higher education, open access learning systems would lead to over-production of people with degrees.
> - Open learning systems are possibly cost-ineffective, largely owing to massive drop-out of students. (Neil, 1981, p. 40)

Most of these attitudes towards open learning were also faced by the founders of the British Open University. The whole idea of such an institution was subjected to persistent scepticism and ridicule from many quarters, even from the Labor Cabinet whose role was decisive in the creation of the University, especially because it was proposed that the University's entrants need not have any prior educational qualifications (Scupham, 1975; Perry, 1977). Ten years on, little or no opposition remains, owing to the successful establishment of the institutional reliability, validity, and credibility of the University (Perry, 1981).

However, people in many other countries still tend to be prejudiced against open leaning, largely because of a general mistrust of innovative nontraditional modes of learning and of a kind of cultural reverence and high regard for the traditional teacher (Im, 1978; Neil, 1981). Im (1978) said that although the initial establishment of an

open learning institution may be well accepted by society, its graduates are not regarded as qualified as those from traditional institutions.

Another criticism concerns the imprudent introduction of open learning institutions by many developing countries. Vahidi (1978) argued that while an open learning system is primarily technology-based, many developing countries do not have a necessary technological base. Beardsley (1975) and Escotet (1983) also warned that the establishment of an open learning system, without a concrete theoretical framework or without considering relevant educational and communications facilities, results in high drop-out rates or limitations of initial size and scope, generating irreparable damage in the target population and making future educational innovation more difficult.

Finally, a number of value issues have been raised concerning the expansion and development of open learning, especially with distance learning methods. Kaye and Rumble (1981) insisted that distance learning methods can deprive the student of the opportunity to develop a true personal understanding of the ideas and concepts contained in the standardized learning materials, and lend themselves more rapidly to totalitarian control than do conventional methods. They pointed to two major elements:

> The first is that distance education tends to ... standardize educational experience and thought at the expense of diversity. Linked with powerful media, ... it can be used to teach people what to think, rather than how to think. As such, it can be used to support a particular view of society which may not reflect the views and interests of the majority in that society. The second, and related, element is that the home-based nature of much of the learning process makes distance education particularly attractive as a means of dispersing and, potentially, depoliticizing the student body. (1981, p. 287)

They further said that, in this respect, there is little difference between the learning method with the standardized materials at home and the passive reception of the dicta of a classroom teacher. Freire (1970) has referred to the latter as banking concept of education in which "knowledge is a gift bestowed by those who consider themselves knowledgeable upon those whom they consider to know nothing," wherein "the scope of action allowed to the students extends only as far as receiving, filing, and storing the deposits" (p. 58). Some aspects of open learning imply a new approach to pedagogy which would counterbalance tendencies towards the banking concept by expanding the freedom of learners in the selection of goals, evaluation, etc. Other aspects of open learning, however, remain as conventional in logic and as dehumanized as traditional education.

Admittedly, open learning is not a perfect solution to all educational problems. However, open learning does hold much more promise than fads which often degenerate into superficiality and result in eventual disillusionment. Therefore, if open learning is to contribute to improved human condition, its true nature - its potentials and problems - must be clearly understood.

Conclusion

Open learning, as it has been conceived since the inception of the British Open University in 1969, is a new concept in education different from traditional correspondence studies. This new theoretical development was presented in this chapter with a view to understanding its strengths, its weaknesses, and its potentials.

The concept of open learning has been considered to be a philosophical rather than an administrative position. In the former sense its meaning is related, to a greater or lesser extent, to the efforts to expand the freedom of learners in admission, selection of courses, pace of study, time and place of study, goal selection, and evaluation methods.

It has also been pointed out that several underlying factors have coalesced into a clear sense of direction about the need of open forms of learning in both developed and developing countries. These factors are mutually reinforcing. On the one hand, the growing demand for more education among those who have had unequal access to conventional education, and the societal imperative of access to lifelong learning for all people require educational institutions that are characterized by openness. On the other hand, the development of communications technology has made it possible to offer alternative ways of education to formal, full-time study, which can reach more people more effectively.

In this study, open learning is presented as a process characterized by a set of interrelated educational variables. As a set of educational variables, the focus is on developing and implementing ways of learning that are congruent with the target populations and their unique environmental-social settings (Reed, 1981). These open ways of learning have been viewed as contrasting in varying degrees those of conventional education, by being more flexible, more

accessible, inexpensive, and by having functional and immediate objectives.

While some criticisms and problems with it remain, open learning is having a clear and positive impact on educational equity both in terms of making quality education more widely available and in making access to post-secondary education possible for previously excluded groups. In this sense, it is a social change that is contributing to increasing social mobility. Further, it represents a change in educational assumptions, depending as it does on new styles of curriculum development, student learning, and assessment. It also constitute a change in the methods of teaching by using modern methods of communication either to overcome the problems of distance or to satisfy the need for part-time study. The combination of these factors lends substance to the belief that open learning is a substantial and soundly based innovation which will have enduring and far-reaching effects on current systems of higher education.

Having examined the nature of open learning in general, it is now important to analyze the instructional methods and media utilized in open learning in more detail, which is the primary concern.

C H A P T E R III

INSTRUCTIONAL METHODS AND MEDIA IN OPEN LEARNING

Introduction

The relationship between communications technology and open learning is a reciprocal one. That is, whenever a new technology with distinctive properties and potential appears, open learning educators are challenged to make use of that technology in reaching new audiences in new ways.

Recent developments in communications technology have put new and flexible delivery methods at the disposal of an open learning institution. Such media as microcomputers, interactive audio, and telephone are giving old-fashioned correspondence study a new dimension. There is every likelihood that open learning will soon be made interactive through the use of these new technologies. Therefore, it is necessary for an institution to know their instructional advantages and disadvantages before choosing educational methods and media appropriate for their brand of education.

This chapter examines the didactic potential of the major instructional methods currently or soon to be used in open learning both in terms of their probable learning effects and the educational objectives. The chapter starts with a discussion of the educational objectives, representing the kinds of learning outcomes considered to be desirable from the start. Such a discussion seems necessary because the

comparative effectiveness of different instructional methods and media depends on their particular didactic results. The distinction between medium and method is then addressed as these terms are often used interchangeably, albeit they in fact refer to different aspects of instruction. Finally, major instructional methods and media in open learning are analyzed in terms of their learning effects.

Classification of Educational Objectives

There are several taxonomies of educational objectives, among which those developed by Bloom (1956) and Gagné (1977) are the most comprehensive. As these taxonomies are too detailed for the purpose of this study, the system selected here is less detailed, while it still follows the existing comprehensive taxonomies. Educational taxonomies are classified into three main categories for this study: the cognitive domain, the affective domain, and the psychomotor domain.

The Cognitive Domain

The cognitive domain is concerned with the understanding and learning of facts and procedures, the learning outcomes of which are represented as knowledge (Bloom, 1956). Knowledge is usually acquired through relatively simple skills such as reading, interpretation, and memorization, which are taken for granted at the post-secondary level. Nonetheless, the acquisition of knowledge by no means implies that the student is able to utilize it. It is indeed possible to gain understanding without developing such higher cognitive skills as analysis, synthesis, and evaluation. In general, however, cognitive skills have to be intermixed with understanding to be of any use. Bloom

(1956) said that cognitive development follows a sequence from knowledge through comprehension of knowledge, its application to particular situations, and progressing to the higher cognitive skills.

The Affective Domain

The affective domain is concerned with values, beliefs, attitudes, predispositions, and prejudices which affect one's behavior towards things, events, or people (Krathwohl et al., 1964). Most people have fundamental beliefs which they are prepared to cling to even if certain items of evidence seem to contradict them. People are usually more concerned to explain or justify their own behavior than to change it. Sparkes (1983) pointed out that because these beliefs and attitudes are so deep-seated and effectively protected, affective education is the most difficult to achieve. He concluded that social pressures are usually more effective than any formal teaching technique. In dealing with the teaching of attitudes, Gagné (1977) also recommended deliberate arrangement of the proper conditions for social learning to take place.

Those who speak of liberal or general education stress the primacy of affective and emotive development over the cognitive and motor aspects of behavior (Dressel, Mayhew, & McGrath, 1959; Mayhew, 1960; Valett, 1977). They emphasize attitudes and values that result from understanding and critical thinking more than specifics, techniques, and skills. Education of this type is perceived here as a lifelong process of developing the whole person who is able to control change and guide his own evolution.

The Psychomotor Domain

The psychomotor domain is concerned with those physical skills which usually call for relatively little knowledge, understanding, or intellectual skills. However, Gagné (1972, 1977) included in this domain such motor activities as those which are necessary to combine with intellectual skills, e.g., when speaking, writing, or playing a musical instrument.

For a long time, educators have tended to look down upon the physical skills domain as unworthy of their attention. Training in most of these skills has tended to remain outside the mainstream of the formal educational system (Romiszowski, 1984). Even today, universities rarely teach these skills. However, the increasing need for skilled workers in highly mechanized industries is now demanding more skill training at the college level. Therefore, it appears this domain should be given more attention.

The Instructional Method and Medium

An instructional method is a way of organizing the learning situation in order to achieve a particular learning objective. Lectures, practical demonstrations, and programmed instruction are examples of an instructional method. An instructional medium, on the other hand, is a system of communication to deliver instruction to learners (Sleeman et al., 1979). Textbooks, radio, television, audio-visuals, and computers are examples of instructional media.

There is no one medium that goes with a particular instructional method. Programmed instruction, for example, can be delivered by

textbook, radio, or computer. Similarly, an instructional medium is not automatically tied to one particular method. Television, for example, can be used for lectures, practical demonstrations, or programmed instruction. The two, however, are not completely independent. The choice of medium can also restrict the possible arrangement of the learning situation; that is to say, the medium itself might well act as a constraint on the different instructional methods that might be utilized (Evans, 1976).

The constraints of open learning, particularly those involving distance teaching, e.g., accessibility of instruction, heterogeneous student population, etc., apply more to the selection of the instructional medium and less to the instructional method, since one and the same medium can be applied for different purposes (Chang et al., 1983). However, learning outcomes are usually characterized in terms of instructional methods. Therefore, some assessment of their interdependences is necessary.

Analysis of Instructional Methods and Media in Open Learning

Three major instructional methods are analyzed in this study: written instruction, audio-visual instruction, and computerized instruction. Their educational advantages and disadvantages are discussed in terms of the educational objectives outlined previously. Whenever possible, the pedagogical value of relevant instructional media is also examined.

Written Instruction

Components of written instruction.

In most open learning projects, written instruction, that is, correspondence education in its pure form, is the core of the instructional system. Other forms of instruction - broadcasting, audio-visuals, face-to-face teaching, etc. - are usually employed to support written instruction.

Written instruction usually consists of printed materials, assignments and questions, and a system of feedback. Printed materials include specially written correspondence texts or lessons, textbooks and readers specially written or already published, reading guides and bibliographies, and supplementary items such as study guides and special assignments (Kaye, 1981).

A review of the literature exhibits two basic opinions about correspondence texts. Rothkopf (1976), emphasizing the promotion of students' own learning activities (mathemagenic activities), recommended utilizing those available textbooks which most closely correspond to the purpose and target group for teaching rather than developing sophisticated instructional materials. Holmberg (1980), on the other hand, suggested that correspondence texts should be different from conventional university textbooks which normally have to be supplemented by the exposition of a teacher. Holmberg concluded that a true correspondence text should be adequate to substitute for both a conventional textbook and the exposition of a teacher. The correspondence textbook serves to guide and teach students by giving complete explanations, providing various kinds of exercises, and

constantly referring back to what the student has already learned. Most institutions develop as basic study material their own texts appropriate for both their individual purposes and their own students.

Assignments and questions are usually contained in a study guide. The study guide also includes instructions about overall and specific objectives for the study and use of its texts. Assignments and questions indicate the kind of learning behavior students are expected to acquire. Assignments have a controlling effect on the student's choice of a particular unit of study. Questions to evaluate the student's learning usually control the learning process and shape learning activities (Rothkopf, 1971). Therefore, it is important that the assignments and questions cover all the essential objectives of the study unit and require the student to function at a sufficiently high cognitive level, and correct answers cannot be found directly by quick perusal of the text (Bååth, 1979).

Solutions to the assignments and responses to the questions are sent to the students' tutors, who review, explain, comment, and return them to the respective students. Although Rothkopf (1971) attached little importance to feedback, and Kulhavy (1977) showed that questions without it do not automatically result in performance inferior to that where it is provided, feedback, nonetheless, plays an important role in written instruction. Bååth (1979) pointed out the major functions of feedback as follows:

- to diagnose each student's previous knowledge and to take appropriate measures on the basis of the results.

- to evaluate each student's learning process and to take appropriate measures if a student's achievements do not correspond to the established objectives.
- to provide some other individualization with respect to each student's aptitudes and previous reinforcement patterns (interests, ways of thinking, etc.). (p. 24)

Feedback may not only be limited to the simple message that the student's solution is right or wrong, but also may be elaborated by pointers to previous references as well as more detailed explanations. In the latter case, feedback functions as remedial teaching (Chang et al., 1983).

Advantages of written instruction. The advantages and disadvantages of written instruction are mainly derived from its principal medium - printed material. Printed material has been the most important simple element of most educational experiences. Books have traditionally been the easiest and cheapest way to deliver a large amount of educational message to a large audience.

Compared with other instructional media, printed material has many advantages: it is usually familiar to most people; it is relatively inexpensive; it is easy to carry around; and it works well in conjunction with most educational technologies (Munchi, 1980). Probably the most important advantage of printed material is that it is the only vehicle of communication which is not restricted to particular times and places (Chang et al., 1983). Thus, written instruction, for the most part, is independent of the time and place of its delivery. It affords the possibility of exposing students to learning experiences at most any moment and place. It is presented in an appropriate sequence, focusing

only on those aspects of reality important to the instructional objectives, and bypassing others.

Disadvantages of written instruction. Not all aspects of reality can be easily captured by words or other symbols. Written materials do not contain moving images, sounds, smells, feelings, or tastes. Sensory data must instead be described by employing that jargon which has been specially designed for difficult-to-express parts of reality as it is defined within certain disciplines and professions. While employing comparisons may be an alternative method to convey meaning about sensory data, there are obvious limits.

Another disadvantage of written instruction is that its effect is largely dependent on the experience and literacy of the student (Chang et al., 1983). By definition, every vicarious symbolization of experience is imperfect. This imperfection becomes all the more problematic to students who lack direct experience with the data. Similarly, the necessity for the student to interpret and decipher the symbolic constructs of written material directly influences the impact of written instruction.

Finally, written instruction by itself does not contain sufficient incentive for many students to continue their study without some form of additional external motivation provided (Munchi, 1980). By contrast, open learning students are usually considered to have higher intrinsic motivation to pursue study than younger students. However, they may still lack confidence while at the same time personal experience may cause them to be more critical towards, and less patient, with

scholastic forms of knowledge (Chang et al., 1983). Therefore, decisions on instructional means should take into account the effects they may have on the motivation of students.

Didactic possibilities and limitations of written instruction. This study understands written instruction to be a pure form of correspondence education that consists of printed materials, questions and assignments, and a system of feedback. It is also assumed that feedback is not conveyed through some form of oral lessons or computer link-up. To do so would erase the intended distinction between pure written instruction and both traditional classroom teaching and computer-assisted instruction.

What, then, are the didactic potentials and limitations of written instruction as defined above in terms of educational objectives?

First, cognitive study objectives can generally be achieved by written instruction. Variations in print can be used to activate and maintain the attention of students by providing relevant information. Print can also be used to learn higher cognitive skills. Written materials can convey verbal descriptions and meaning contexts that are useful for this kind of skill learning. It is also possible to organize the presentation of new and varied problems through questions, assignments, and the feedback system with the intent to provide students with the opportunity to experience those skills.

Second, the promotion of the learning in the affective domain by means of written instruction, on the other hand, seems problematic. Gagné (1975) distinguished two principal forms of attitude learning: a

"directed form" based on "experience of own success or failure" and an "indirected form" that refers to "modeling" (p. 93). For each of the two forms of attitude learning, Gagné (1975) gave three critical external learning conditions:

> 1. Reminding learners of success experience following choice of particular action; alternatively, insuring identification with an admired human model.
> 2. Performing the chosen action; or observing its performance by the human model.
> 3. Giving feedback for successful performance; or observing feedback in the human model. (p. 93)

The first of these conditions, he said, constitutes "a particularly critical feature in the learning of attitudes" (Gagné, 1975, p. 88). However, it appears difficult to fulfill this condition by means of pure correspondence education. It is difficult for the course writer or the correspondence tutor to remind learners of previous experiences of success or to allow them to select human models with whom they could identify. A more feasible solution may be to provide all materials necessary for facilitating the learning of the cognitive and affective aspects of the attitude in question. The materials could be designed so as to stimulate learners to allow the new ideas and their corresponding emotions to lead to action or discussion of the action with their friends or family members (Bååth, 1979).

Third, the possibility of teaching psychomotor skills by means of written instruction alone also seems very limited. While it is possible that a number and sequence of actions that make up a performance can be taught with texts and pictures, the opportunity for the performance and

feedback phases cannot be provided within the context of pure correspondence education. In those cases where the new skill is closely connected with primarily such intellectual skills as writing, playing music, etc., the performance of combined motor and intellectual skills could lead to results on which the correspondence tutor can provide feedback (Bååth, 1979).

In summary, the attainment of learning goals in the cognitive domain would seem to be possible by means of written instruction. However, difficulties in controlling external learning conditions sufficiently appear to inhibit the learning of certain attitudes and psychomotor skills.

Audiovisual Instruction

Audiovisual instruction refers to various technological aids that are designed to improve instruction. While their introduction was partly due to the needs to accommodate larger classes than those that could be served by traditional methods, a more compelling reason for their present use is the need to reach nontraditional, housebound, or handicapped learners (Cole, Jr., 1982).

Two types of audiovisual means of instruction are examined in this study: those which only record and reproduce sound; and those which record and reproduce a combination of sound and moving images. Techniques that employ static images such as slide projection and slide tape are not examined in this study because static images are possible to carry through the pictures, maps, and diagrams of written components.

The technology of auditory registration. Three major techniques of auditory registration are considered here: phonograph records, audio cassettes, and radio broadcasting.

Phonograph records produce better quality of sound than audio cassettes, but at a higher cost. They require a machine with a turntable, needle, and loudspeaker to play back the sound. Special equipment and some form of production studio are also required to make records. Although the acoustic fidelity of records is better than that of cassettes, such fidelity is hardly necessary in the context of education, and this advantage is negligible in comparison with the greater possibilities of duplication that cassettes can afford (Chang et al., 1983). Therefore, phonograph records are rarely used in open learning (Bates, 1982a; Chang et al., 1983).

Audio cassettes, on the other hand, are now widely used in open learning. Bates (1982b) pointed out that for the British Open University, "the greatest media development during its 12 years of existence has been the humble audio cassette" (p. 11). Bates (1982b) also reported that administrators prefer audio cassettes because they are inexpensive, while academics feel they are easier to control and integrate into course design. Students also like audio cassettes because of their convenience, informality, and ease of control. Furthermore, cassettes can be used in a variety of ways - "for master learning, ... for backing up or commenting on other media, ... as resource material, ... or for specialist lectures that explore the wider significance of the course subject" (Bates, 1982b, p. 11).

The most frequently cited disadvantages of audio cassettes are: they require a high degree of learner's concentration; in most instructional areas they require supplemental visual support (Hancock, 1977); it is difficult to record and deliver a large amount of materials through cassette alone (Sleeman et al., 1977); and it is often more difficult for a student to find his place in a cassette than in a text (Daniel, 1983).

Finally, since the first educational broadcast in 1917 at the University of Wisconsin at Madison, radio has been used for many decades in various ways (Purdy, 1980). The use of radio in a multi-media based open learning system has been well demonstrated by the British Open University, where it has been used for discussing student problems, assigning tasks, shifting students to other broadcasts, and reinforcing material in the course text (Long, 1983). The greatest advantage of radio is its wide coverage. Since it can be received anywhere without electrification, it is accessible to hard-to-reach learners in rural areas (Ingle, 1974). This is critically important for an institution which aims at serving learners dispersed over a large geographic area.

The disadvantages of radio are three-fold. First, it also requires a relatively high degree of concentration from the students and needs visual support in most cases. Second, students are bound to the predetermined times of broadcasting. Repeated broadcasts of the same lesson may reduce this problem, but will increase expenditures. Third, related to the second, it is difficult for an institution to secure enough broadcast without its own radio station. Most current

transmission tends to be early in the morning or late at night, which is particularly disadvantageous to the working people.

The technology of visual registration. Two major technologies of visual registration are examined in this study: instructional television (ITV) and video cassette. Although there are other possibilities of visual registration such as film and videodisc, their didactic effects are not very different from those of video cassette or ITV (Campeau, 1974). There seems to be little possibility of these technologies being used in open learning.

Television may be the most widespread and promising of all technologies in education. It can be used for various purposes. The development of a low-power broadcast system (instructional television fixed service), communications satellite, and cable television makes it a much easier and more convenient way of serving learners over a large geographic area (Curtis & Biedenbach, 1979).

Television has already been used as an important course component in many open learning institutions. The British Open University, for example, has used television as a major instructional medium from its inception (Durbridge, 1981). It was found to be most appropriate in the effort:

- to demonstrate experiments or experimental situations, particularly:
  (a) where equipment or phenomena to be observed are large, expensive, inaccessible or difficult to observe without special equipment;
  (b) where the experimental design is complex....
- to record special events, experiments, species, places, people, buildings, etc., which are crucial to the content of units, but may likely to disappear, die or be destroyed in the near future.
- to change student attitudes:

> (a) by presenting material in a novel manner, or from an unfamiliar viewpoint;
> (b) by presenting material in a dramatized form, enabling students to identify with the emotions and viewpoints of the main participants;
> (c) by allowing the students to identify closely with someone in the program who overcomes problems or himself changes his attitudes as a result of evidence presented in the program or televised exercise. (MacKenzie et al., 1975, pp. 60-61)

Television education, however, is also limited by available broadcast time, as is radio, and transmissions tend to occur either in very early morning or late at night. These limitations have led many open learning institutions to use alternative technologies such as video or audio cassettes. Another important limitation of television is that it provides only one-way communication, which has been shown to be a less effective educational medium for adult learners than two-way communication between the instructor and learners.

One of the more recent uses of technology in open learning which has received much attention is video cassette. Because television does not allow for student questions or adjust to individual differences, and because of limited transmission time and inflexible broadcast schedules, the use of video cassette as a means of storing television programs for later viewing is of particular interest to many open learning institutions. Once video cassette recorders become more widespread, those television programs could be broadcast at night or during working hours, and be recorded by students for later viewing at their convenience. The television broadcast itself might even be replaced by video cassettes.

An open learning institution can also produce its own video programs. Although the instructional functions of the video programs have not been well defined, producers "use the medium to its fullest capacity, providing illustration of processes and places, engaging a student's attention, and speaking to the affective domain" (Munchi, 1980, p. 3). Video programs are able to pace the study of distance learners, as they can derive the fullest benefit from a program only by preparing for it.

Didactic possibilities and limitations of audiovisual media. As the audiovisual means of instruction examined in this study have been classified into those of auditory and visual registration, their didactic possibilities are also examined separately. And since these audiovisual aids are generally used in open learning to support written instruction, their possibilities are discussed here as compared with those of written instruction.

With respect to auditory registration, recordings of speech can extend the didactic possibilities of written instruction in the cognitive domain. The instructor can maintain student attention and provide additional clues for comprehension that are difficult to realize in the case of text only. Although speech recordings added to written text may not make much difference for the acquisition of knowledge overall, they can make new essential points or reinforce those already made in the text (Meed, 1976). Speech recordings significantly extend the possibilities of written instruction in the study of language. They afford the possibility of practicing listening and speaking, while

written instruction is limited to the elaboration of reading and writing skills.

Speech recordings can hardly extend the didactic possibilities of written instruction outside the cognitive domain. Although some writers, e.g., MacKenzie et al. (1975), said that radio broadcasting might change the attitudes of students by presenting material in a novel manner or dramatized form, it appears difficult to sufficiently control those external conditions which Gagné (1975) identified as critical for attitude learning by auditory registration alone. Because whatever cannot be written also cannot be voiced and recorded, auditory registration alone barely affords didactic possibilities not already offered by written instruction.

With respect to the visual registration, the addition of moving images can greatly enhance the effects of written instruction. This is particularly true when it is necessary for students to witness things which cannot be described in written words or are too exotic for them to visualize on the basis of a written description alone. Visual registration can assist in the transference of more abstract and analytical textual ideas covered to the more concrete and complex real world. It can also provide models or bridges to understanding by giving concrete examples or visual models of abstract ideas (Bates, 1982b).

Visual support can also be of great help to those who either have not succeeded in conventional education or who have left formal education a long time ago. Because moving images require different mental skills from those developed exclusively by reading and writing

and because they deliver information differently from written materials, television or video cassette programs have the potential to serve greater numbers of adults who otherwise would not continue their education (Eyster, 1976).

To some extent visual registration can extend the possibilities of written instruction in the affective domain as well. As seen before, television programs were found to be appropriate mechanisms for changing student attitudes in the British Open University. Action and sound effects are simply superior attention-getters and more powerful than written words or dialogue (Greenfield, 1984). The psychological distance between the instructor or other informants in the program and students can be reduced by adding visual images. In this way, students might be encouraged to identify more readily with a model and to thus interact vicariously with the real world. Greenfield (1984) stated that television is so powerful that with careful planning it can be used to either reinforce social stereotypes or to break them down.

Visual support is also appropriate for teaching psychomotor skills. While it may be possible to describe sequences or operations in words, these descriptions are usually so unwieldy that they hardly form a basis for learning to perform the skill. A practical demonstration of performance can have more effect than a whole textbook of instructions. However, this advantage does not guarantee that students who have watched the performance can perform the skill. As Chang et al. (1983) pointed out, just watching a skill being performed will barely suffice to gain proficiency in it.

In conclusion, audiovisual aids can extend the didactic possibilities of written instruction, to a significant extent in some areas. When or whether such audiovisual support is necessary depends largely on the kind of physical, cognitive, and emotional reality involved in that subject area. However, as with written instruction, the audiovisual means of instruction only affords vicarious representations of reality. Students can neither use their acquired knowledge to operate on reality nor observe the results of their own performance. This is possible only through direct interaction with reality.

Computerized Instruction

Computers in education. The use of computers for education is relatively new and, until recently, has been limited chiefly to data-analysis and record-keeping. However, new developments in the computer field have made the computer potentially the most important of all technologies in adult continuing education, including open learning, because it can provide highly flexible and individualized instruction. Moreover, the development of the personal computer makes it possible for many people to either have their own computer at home or to have easy access to one. Personal computers can be used for a variety of educational applications in any subject area. As more new kinds of software for educational applications become available at a reasonable price, people can learn what they want at home.

Two major categories of computer use for open learning are examined in this study: computer-assisted instruction (CAI) and computer-managed

instruction (CMI). In CAI, students interact directly with a computer, while in CMI, students do not communicate directly with a computer.

Computer-assisted instruction. Computer-assisted instruction refers to those programs in which a computer is used to interact tutorially with a student as he moves through a self-paced program or course of instruction. A student sits at a computer terminal in "continuous dialogue with the computer" (Cole, Jr., 1982, p. 35). The student makes entries in response to instruction and the computer, programmed to vary subsequent instructions in accordance with the inputs, provides instant responses.

One of the best known systems of CAI is PLATO (Programmed Logic for Automated Teaching Operation) developed at the University of Illinois. PLATO is a control computer facility which serves nearly 1,000 distant learners through a network of widely distributed terminals linked by telephone lines (Cole, Jr., 1982). It has wide graphic capabilities and its terminals can trigger random access audio and video in response to a touch (Feasley, 1983). Subject areas being taught include foreign language, physics, biology, political science, veterinary medicine, economics, accounting, music, and engineering (Harrison & Stolurow, 1975).

The potential of CAI for instruction is extensive. Its greatest advantage is in the reduction of the time required for learning. Students who participate in CAI generally do at least as well as those in conventional classrooms in significantly less time (Cross, 1976). CAI is particularly effective for subjects in which much drill and

practice are required. Since it is essentially a question-and-answer program in which the computer poses a problem, gives the student a chance to respond, and then tells the student if the answer is right or wrong, it can be used effectively to teach certain types of knowledge. Another important advantage of CAI is its flexibility and variety. Goodlad (1971) described the flexibility and variety of CAI as follows:

> A properly programmed computer is able to present words to be spelled, sounds to be made, instruction to be followed, and so on. It is able to present images and symbols to be responded by the touch. It is able to evaluate pupil performance and to direct the student backwards, forwards, sideways, for appropriate learning activity. (p. 91)

However, CAI has not been used in many institutions. Even in the United States, only 16 percent of community colleges have used CAI in 1974 (Cross, 1976). The reasons for this are both educational and administrative. The primary reason seems to be the cost for developing CAI. Although costs have been reduced markedly in recent years, and some researchers, e.g. Bork (1980), said it is economical if we consider the time of student as an important factor of cost, many institutions still perceive cost as the deterrent to the adoption of CAI.

Another reason is the attitude of faculty towards technology and education. They look upon education "more as a process and as interaction between human beings rather than between a human and a machine" (Cole, Jr., 1978, p. 40). It is difficult to get faculty to accept materials developed by others unless they understand the technology well enough to do it themselves. The study by Sax (1972) revealed many subject-matter specialists resist learning computer

language and resent being forced into computer-logical ways of thinking about their subject.

Computer-managed instruction. Although both CAI and CMI assign heavy educational responsibilities to a computer, the two systems are very different. In CMI, students do not interact on line with a computer. The computer is used to manage individualization of instruction through diagnostic testing and prescribing assignments based on individual performance levels and needs (Cross, 1976).

Brief descriptions of two CMI systems used at the college level will illustrate the method. Miami-Dade Community College in Florida developed a CMI system called Response System with Variable Prescriptions (RSVP) in 1972 (Cross, 1976). Both on and off-campus students are served by the computer, which serves tests, diagnoses learning problems, gives assignments, and reports results. The student then learns which concepts he failed to understand and is directed to certain portions of a television program, pages in a textbook, or sections of a learning module. This system was a great success in Miami-Dade's completely self-paced Open College, which enrolls largely older, off-campus students.

The students rated the RSVP feature more useful than any of the other components of Open College, including texts, study guides, telecasts, and broadcasts. The RSVP program received especially high ratings on items related to the reduction of anxiety and the building of self-confidence. Seventy-three percent of the students felt strongly

that RSVP had helped them stay with the course and they could not have performed as well in the course without RSVP (Cross, 1976).

A similar system has recently been put into effect at TV Ontario, a television network operated by the Ontario Educational Communications Authority (Waniewicz, 1981). TV Ontario introduced a two-way communication computer managed learning (CML) system in 1980. CML system has been used to write individualized letters to learners in response to the answers which learners send in to the carefully designed multiple-choice questions. The response letter clarifies particular concepts, stimulates learners into further inquiry, gives an advice on related activities, and helps them contact each other for possible group meeting and discussions on problems they have in common.

CMI has been proved more effective than traditional correspondence education in many institutions. Bååth (1982) reported that students tutored through the CADE (Computer-Assisted Distance Education) system at Hermods in Sweden submitted their assignments earlier, completed the course to a greater extent in a shorter time, and had more favorable attitudes towards education than those receiving education in the traditional manner. Basser and Allen (1977) and Phillips and Young (1982) reported similar results.

Cooley and Glaser (cited in Feasley, 1983, p. 25) summarized the advantages of CMI as follows:

> CMI has the ability to (1) present alternative goals that students select to determine their learning paths; (2) continuously monitor and assess how much practice a student requires, how well information is retained, and what methods of study work well; (3) use previous performance data to prescribe specific methods of

study or testing; and (4) provide the instructor with group and individual statistics to help in the revision of course materials.

CMI is much less costly than CAI, and thus has greater promise for widespread adoption in the near future. The problem is to specify learning objectives so that learning problems can be diagnosed through student responses to objective questions and useful prescription can be prepared for groups of students having common diagnoses.

Didactic possibilities and limitations of computerized instruction. As for the learning of the cognitive domain, computerized instruction can surely enhance the effects of written instruction. By the use of CAI, it would be possible at the beginning of the course to analyze systematically each student's previous knowledge and cognitive structure and to provide appropriate learning materials according to the analysis. Furthermore, during the course, it would be able to assist in the teaching situation by directing the student's learning efforts in an effective way.

Computerized instruction has some possibilities for learning in the affective domain through computer simulation. Simulations are exercises which involve the abstracting of certain elements of a model to approximate a social or physical reality in such a way that students can interact with and become a part of what is being simulated. Some simulation games can be computerized, and the computer can be programmed to respond to manipulations of some elements of a model so as to yield indications of what is happening, or will happen, as a result of the manipulation (Cole, Jr., 1978). Through these simulation games,

students get various feedback and vicarious experiences of social interaction which promote social and emotional growth.

The application of computerized instruction to the psychomotor skills seems to be limited, although it is possible to design practical demonstrations of performance. These demonstrations can be done more effectively through television or video cassette programs.

In summary, computerized instruction can be employed as a means for monitoring students' learning activities and as a means for recreating reality. The possibilities of employing computerized instruction, therefore, depend on the extent to which the cognitive activities can be described and prescribed, and the extent to which the reality involved can be simulated.

Conclusion

New ideals create new problems. From an educational point of view, the foremost problem of an open learning university is the choice of appropriate instructional methods and media which compensate for the face-to-face teaching that has traditionally provided the major part of knowledge and skills in higher education.

In this chapter, three major modes of instruction currently or soon to be used in open learning - written, audiovisual, and computerized instruction - have been examined in terms of their potentialities and limitations in realizing three domains of learning objectives. In the cognitive domain, written instruction can be as effective as, if not better than, any other instructional method. Audiovisual and computerized instruction also enhance the possibilities of written

instruction considerably. As to the affective and psychomotor domain, however, written instruction is found to have its limitations. Even when combined with audiovisual or computerized instruction, it cannot teach those skills which cannot adequately be described or prescribed in the form of explicit procedures. For those skills which must be acquired at such levels of proficiency that practice by simulation or other vicarious means, written instruction alone proves inadequate. The instruction of these skills, then, is enhanced by face-to-face teaching methods, or in some combination with the above.

There are many ways of designing instruction with the use of modern technology. Each one has its own strengths and weaknesses. However, the choice of instructional methods and media by an institution does not solely depend on their instructional advantages. Many other factors, such as the role of faculty, the development level of those technologies, and other socio-economic and political constraints, should all be carefully considered in developing appropriate instructional systems. The final issue is how to develop a system which provides as much convenience as possible for students who, for whatever reason, are limited in their ability to attend instruction at arbitrary times and places. This will be explored in the next chapter by examining two case studies: the Open University in the United Kingdom and Holyoke Community College in the U. S. A. The focus of the examination will be on the overall administrative structure and the instructional delivery system of each.

C H A P T E R IV

PRACTICAL IMPLICATIONS FOR DEVELOPING INSTRUCTIONAL SYSTEMS: TWO CASE STUDIES

Introduction

Open learning has begun to make a successful impact as a principle. It has been demonstrated that it is needed and that institutions based upon this principle can operate effectively. What an open learning institution now needs for its further development is more information and research. The next task for such an institution is to design and implement development strategies that are appropriate for its own social context.

The diversity of purpose and structure of open learning systems, however, makes the collection and classification of information useful for development and planning similar projects quite difficult. Generalization from one context into another is thus neither easy nor probably very helpful. For this very reason, case studies may provide some guidance in deciding which aspects of open learning systems should be studied in detail for further implementation in different environmental and national contexts.

The purpose of the case studies in this chapter is to derive useful implications for developing instructional methods and media for Korean open colleges. The Open University (OU) in the United Kingdom is chosen

for study because it utilizes a major well developed multi-media based system which has given a substantial impetus to similar projects in different countries around the world including Korea. The second case of an American community college, Holyoke Community College (HCC), is examined because it represents a possible prototype for other regional colleges of open learning and is in many ways similar to Korean open colleges.

The following outline has been used as a guide for the major discussions examined in the cases:

1. Origins and history.
2. Major purposes of the project.
3. Organization and decision making structure.
4. Staff.
5. Finance and costs.
6. Student characteristics.
7. Course structure and curriculum.
8. Instructional methods and media.

The Open University in the United Kingdom

Higher Education in the United Kingdom

The educational system of the United Kingdom is predominantly publicly controlled and financed at all levels. Ninety-five percent of all children attend state schools. There is no university and institution of higher education outside the orbit of the state-financed system (The Central Office of Information, 1984). Universities,

however, enjoy a very high degree of academic and administrative independence.

Higher education in the United Kingdom dates back to the twelfth century when the University of Oxford was established. Advancement to university study, however, has been a very restrictive process. In 1939, there were only 50,000 full-time students at 24 British universities. It was only after the Second World War that the United Kingdom became involved in a significant effort to expand the capacity of its conventional universities. A landmark development in this expansion was release of a Government Committee report on Higher Education (the Robbins Report) in 1963, which enunciated the principle that "courses of higher education should be available to all who are qualified by ability and attainment to pursue them, and who wish to do so" (cited in Scupham, 1975, p. 323). The report called for the provision of enough new places by 1980 to raise the enrollment of the age group entering full-time higher education from 7 to 17 percent. Currently, there are 47 universities in Britain, including the Open University, which enroll about 308,000 full-time students. Of the entire population of eighteen-year-olds, about 13.5 percent enter full-time higher education courses annually (The Central Office of Information, 1984).

The size of the expansion has not only transformed the universities, but has also led to the redesignation of thirty technical colleges (polytechnics) as centers of advanced study. These polytechnics offer full-time, part-time, and sandwich courses where

substantial periods of full-time study alternate with periods of supervised experience on a relevant job. More than 637,000 students take courses at these polytechnics and other colleges of further and higher education which are maintained by local education authorities.

In addition, nearly all British universities have extramural departments which offer courses and organize classes of a non-vocational nature. They work in partnership with local education authorities and various voluntary bodies which are grant-aided by the central government. In 1983, there were more than 3 million part-time students, nearly 500,000 of whom were released by their employers for further education during work hours.

As can be seen from the above, very relevant and favorable conditions existed in Britain for the creation of a nationwide open learning institution, not only because of the existence of clients, but also because of the nation's prior experience with similar educational activities. Both the geographical conditions of the British Isles and the communications services at the national level were among the other important factors for the development of a national open university. The most important, however, was, strong political and government support from the very inception of the Open University, which is described in the following section.

Origins of the Open University

The Open University in the United Kingdom is an independent university that is endowed with clear political, financial, and academic autonomy. The Open University offers general university education to

over 90,000 students by using various instructional methods and media. The vast majority of its students are fully employed adults who want to further their education, but are either not interested in or unable to pursue a regular university course of study. The OU, however, is "not an educational emergency service for the underprivileged nor a diploma factory, but a modern university, ... for adults in search of a continuing education" (Vanderheyden & Brunel, 1977, p. 45). It is the nation's largest university, presently educating about one quarter of all undergraduate students.

Lord Walter Perry (1977), OU vice-chancellor for many years, has written an anecdotal history of the University. In it, he described the political climate in which the OU was born. The idea was conceived in a 1963 Glasgow speech by then Labour Party opposition leader, Harold Wilson, which led to a 1966 White Paper proposing a "University of the Air." Wilson was determined to harness "technological advances in the media of mass communication to the service of education" (Perry, 1977, p. 9). The idea, however, was immediately denounced as a pipe dream by such conservative and influential spokespersons as the editors of the Times Educational Supplement.

The flashpoint of the story, in Perry's words, was the appointment of Jennie Lee as Minister responsible for the Arts in the Labour Government. In 1965, Prime Minister Wilson, asked her to assume responsibility for the University of the Air. It was under her strong and persistent leadership that the idea of the OU evolved. In the 1966 White Paper, she insisted that a special television channel be reserved

to the venture. One additional paragraph of the White Paper stated, moreover, that "From the outset it must be made clear that there can be no question of offering to students a makeshift project inferior in quality to other universities" (Perry, 1977, p. 17). Thus, the two most important issues relating to distance or open learning that were to preoccupy planners were raised from the beginning: quality and equality of opportunity.

The name of the prospective university was changed to Open University in 1966, in recognition of its commitment to openness for all. In 1967, a government-appointed planning committee was charged with making a comprehensive plan for the Open University as outlined in the White Paper. The Planning Committee's report published in early 1969. By July of that year, the University's royal charter was granted and the Open University became a fact. With the first students admitted in 1971, the OU began to offer four foundation undergraduate courses: arts, mathematics, science, and social science.

Major purposes of the OU

The primary purpose of the OU is to open the door of higher education to millions of people for the first time. The final report of the Planning Committee (cited in Rumble, 1982, p. 10) summarized the aims of the OU as being:

> to provide opportunities at both undergraduate and postgraduate level of higher education to all those who, for any reason, have been or are being precluded from achieving their aims through an existing institution of higher education.

To realize these aims, the OU requires no formal academic entry qualifications and employs a variety of communications media to deliver instruction to its students. The latter policy enables people to have access to higher education no matter what their location.

The OU, however, in practice is not open to all who apply. Various limits are imposed. Some are prevented from enrolling due to financial constraints that restrict the number of places available. Other restrictions are applied for reasons of policy. A minimum entry age of 21, for example, was decided in addition to various external occupational and geographical quotes (MacKenzie et al., 1975). Intermittent study opportunities are permitted so that an enrolled student can withdraw temporarily and rejoin. The idea of openness for the most part, however, is still primary in the OU.

Organization and Decision Making

As noted in chapter II, the organizational structure and decision making process in an open learning institution tend to be more centralized than in conventional universities. The British Open University is no exception. The University Administration has overall control over the design, production, and distribution of multi-media instructional materials, and over the admission, registration, tutoring, assessment, and accreditation of the students, instead of vesting this control in the academic departments (Rumble, 1982).

The University is governed by a council which includes among its membership representatives of the academic staff, part-time counselling and tutorial staff of students, and representatives of external

organizations such as Privy Council, the British Broadcasting Corporation (BBC), the Royal Society (the leading British scientific body), and local educational authorities. Subject to the academic powers of the Senate, the Council exercises general control over the University's affairs, particularly those concerned with finances, property, and staff matters.

The academic authority of the University resides in its Senate. The Senate is composed of over 800 members, including all central and regional academic staff and other senior central staff, elected representatives of part-time tutorial and counselling staff, and BBC producers. The Senate controls the University's teaching and research, regulates its examinations, and is concerned with the institution of courses of study and degrees.

The remaining statutory body of the University is the Academic Advisory Committee, which consists of distinguished academic staff from other universities. The Academic Advisory Committee is charged with the task of ensuring that the academic standards of the OU, particularly with respect to the examination and assessment process, conform with those of other institutions.

According to Scupham (1975), the existence of three distinct bodies with the above stated functions is vital to the conduct of any similar enterprise. He recommended a lay governing body, academic autonomy exercised through a democratic structure, and "an outside tribunal of unimpeachable academic authority to validate the university's procedures and degrees until it is firmly established" (Scupham, 1975, p. 331).

Staff

The staff of the OU is much more diverse than that of a traditional university. Since its beginning the University has had to recruit the academic members of its central and regional staff, librarians, and usual administrative support. It has also developed special needs for systems analysts, computer programmers, typographers, designers, graphic artists, photographers, and experts in such various fields as copyright, publishing, the management of correspondence services, and the worldwide marketing of printed and audio-visual materials (Scupham, 1975). In addition to the full-time staff, more than 5,000 part-time tutors and counsellors, most of whom are teachers in other universities and colleges, are located in study centers.

Finance and Costs

As is the case with the other universities of the United Kingdom, the OU is financed principally from public funds. The University receives approximately 80 percent of its funding from government grants and 20 percent from student fees, including summer school fees. The average cost per student is about one third that of the conventional universities, while the cost per graduate is about one half that spent by conventional universities owing to the higher drop-out rate (Rumble, 1981b).

A number of other studies also suggested the cost-effectiveness of the OU. Laidlaw and Layard (1974), examining the relationship between fixed and variable course costs, showed that the variable cost per student-course was lower in the OU than in conventional British

universities, while the fixed costs were much higher. They concluded that:

> the real strength of the Open University teaching system, aside from its social aspects, is the potential economics of scale which can be reaped by substituting capital for labour. This means that a major part of the costs of the course became fixed and invariant with respect to student numbers. (Laidlaw & Layard, 1974, pp. 456-7)

Laidlaw and Layard (1974) also indicated that the break-even point at which the OU becomes as equally cost-efficient as a conventional university was 21,691 students as of 1972. Increase in student numbers above this level would result in a decrease in average student costs. This finding constituted the economic case for the University's rapid expansion.

Wagner (1972, 1977) has also concluded that the cost-efficiency of the OU makes a convincing case for its expansion.

Although some questions about validity of the the cost-effectiveness of the OU have been raised by Carnoy and Levin (1975) and Mace (1978), there seems to be little doubt about the Open University's overall economic efficiency.

Student Characteristics

The student body of the OU, especially its first entering class of 1971, has been studied extensively. In examining the data on the student body, one must keep the OU's open admissions policy in mind. Applicants are admitted on a first-come, first-served basis, subject only to specific course, regional, sex, and other quotas.

From the standpoint of the OU founders, the really important question is the extent to which the University is able to reach those who come from the disadvantaged sectors of society previously excluded from higher education, particularly working class people. There is no doubt that the extent of diversity in the composition of the student body is somewhat disappointing. Working class occupations have been consistently underrepresented. While manual workers increased their proportion of applications from 5 to 10 percent between 1971 and 1975, the increase since then has not only leveled off, but it may even be declining (McIntosh, Woodley, & Morrison, 1983). Such groups as teachers and technicians have been consistently overrepresented, but since 1978 their relative percentages have been declining.

About 45 percent of the applicants in 1980 were female, 61 percent between the ages of 26 and 40 (Rumble, 1982). For many students, the primary motive for undertaking such an arduous course of study was vocational (Scupham, 1975).

The completion rate thus far has been comparatively high. By the end of 1978, 54 percent of the 1971 entry group obtained degrees. While the percentage of those earning course credits in the first two years of study is in the 80 percent range, it declines in subsequent years (McIntosh, Woodley, & Morrison, 1983).

Since the OU adopts an open admission policy, another area of interest is that of formal education qualifications. Did the OU provide a real opportunity for those who did not possess the entry requirements for a conventional degree course? McIntosh, Woodley, and Morrison

(1983) reported that those in the qualified group graduated more quickly in the first few years but then the rate began to level off. By the end of 1978, 62 percent of the qualified group among the 1971 entrants had graduated, while 40 percent of the unqualified group also had obtained a degree. These findings indicate that the OU has indeed provided a real second chance for higher education to those who have been educationally underprivileged.

Course Structure and Curriculum

The Open University offers three programs of study: undergraduate, higher degree, and continuing education courses.

The Undergraduate program. The undergraduate program leads to a Bachelor of Arts (B.A.) degree which is equivalent to that granted by other British universities. As is previously noted, no formal educational qualifications are required for admission to this program. The only requirement is that the applicant be at least 21 years of age and resident in the United Kingdom. The OU is thus not in direct competition for students with conventional universities.

The objectives of the undergraduate program are:

> (a) to provide students with a range of multi-disciplinary foundation courses;
> (b) to provide students with courses of a range which allows those who do not want to center their studies on one particular area to plan a coherent degree programme;
> (c) to provide students with an opportunity to 'major' in a number of areas of study. (Scupham, 1975, pp.337-338)

Towards these objectives, the University has adopted a credits system similar to that found in the United States. It also provides

about a quarter of the full-time courses as general or open courses which are broad in subject matter and span over different academic divisions (Scupham, 1975).

A typical full-time course is a 32 or 34-week one-year course. The one-year courses are grouped in six main lines of study: arts, educational studies, mathematics, science, social sciences, and technology. They are offered at four academic levels. Many half-credit courses are offered at the advanced level to allow wide student choice in the structure of degree and to encourage breadth of study.

A B.A. degree is awarded to a student who obtains six credits, two in foundation courses and four at second or subsequent levels.

One topic of interest here is the course team approach to curriculum development. Each course team consists of three groups of staff: academics, educational technologists, and the BBC production staff. The underlying rationale is that a team brings together academics from a number of disciplines, which is of key importance in multidisciplinary curricula. Perry (1977) said that a team "would provide the expert knowledge that was needed to make the course suitable for adults working in isolation through correspondence texts and radio and television broadcasts" (p. 84).

The course team approach has been adopted by other multi-media distance and open learning projects. In recent years, however, doubts have been raised as to whether the course team is crucial to success and to whether open learning should "warrant so obsessive an attention to instructional perfection" (Griew, 1982, p. 191). Developers of Japan's

new University of the Air have decided not to adopt the course team approach because they feel it may waste time and become inordinarily expensive (Zigerell, 1984).

Higher degree program. From its inception, the OU has had a significant proportion of postgraduate students undertaking research degrees. Three higher degrees - Bachelor, Master, and Doctor of Philosophy - are awarded when a student satisfactorily completes a program of research or advanced study and submits a dissertation or thesis. The purpose of this program is to provide opportunities to attain higher degrees for those who are unable to satisfy the residential requirements of conventional universities. A student's progress is assessed by means of research credit which is defined as "a period of study equivalent to three months of full-time study and research" (Rumble, 1982, p. 25). At the same time, it is necessary to fulfill a required number of research credits before submitting written work for a degree. The award of the degree is based on the successful examination of the completed dissertation or thesis.

Continuing education program. The continuing education program is designed for adults who wish to extend their knowledge of their own career or who aspire to acquire knowledge in a new field without embarking on a full degree program. A number of non-credit courses created especially by the Center for Continuing Education are available together with individual courses from the undergraduate program. The latter courses carry credit which may count towards a B.A. degree if the

student later registers for a degree program. Students who complete the course and pass a final examination receive a course certificate.

Since its inception, the OU has been concerned primarily with degree-oriented general education. However, it is now moving into the area of continuing education. In recognition of the fact that there has not been as much demand from blue-collar groups for degree-oriented study that the OU founders had originally believed, the OU has become more concerned to offer short vocational courses (Zigerell, 1984).

Instructional Methods and Media

The OU was primarily established to take advantage of innovative techniques in correspondence study that were linked with new educational media. In this respect, it has amply demonstrated that a system of higher education based on distance learning is entirely feasible and that courses can be developed which equal and often surpass most classroom offerings (Gross, 1976). This accomplishment has resulted from specific adaptations of written instructional methods: on the one hand, by supplementing them with audio-visual and computerized instruction, while on the other, by making optimal use of a limited, but highly effective system of face-to-face instruction.

Written instruction. Written instruction conveys the central message of the course through correspondence texts which are complemented by required readings in the form of set books and other reading materials. To these are added a system of questions and assignments, a system of correction and remediation of student responses

to the questions and assignments, and home experimental kits for students enrolled in science and technology courses.

The correspondence texts comprise the core of the instructional system. They are specially written by the central academic staff and organized into 32 to 34 weekly work units, which the student receives by mail at three or four-week intervals. Students in most courses are also given a list of set books, which they are advised to purchase. Some of these books are written either by OU academicians or by special consultants for the course. Students are also provided with a list of books recommended for optional extra reading. These course books are further supplemented by notes on special television and radio broadcasts, individual instructions for carrying out home experiments, and self-assessment questions (Scupham, 1975).

The system of questions and assignments, together with the associated feedback system, primary promotes the development of cognitive skills. This is particularly the case with tutor-marked assignments (TMAs), in which detailed comments are given on the work submitted by students. These comments not only focus on the subject matter in question, but also deal with such aspects as general approach, and study and reading techniques (Clennell, Peters, & Stewart, 1977). Such individualized and intensive guidance is rarely found at conventional universities. Chang et al. (1983) pointed out that the personalized character of tutor comments also positively reinforces student motivation for continued study.

A particular problem faced by the OU is the teaching of science and technology adequately to home-based students who have little or no opportunity to conduct practical experiments on their own. The University's response to this problem has been both to demonstrate such experiments in special televized programs, and to provide students with home experiment kits which can be used to conduct their own experiments at home in accordance with the detailed instructions that are provided in home experiment guidance notes (Rumble, 1982). The various components of the kits are classified as durable or consumable. The former are lent to students for the duration of the course under the condition they be returned. While the home experiments undoubtedly have had some didactic effects, primarily in the psychomotor domain, Gallagher (1977) reported that students generally did not consider them very useful.

Broadcasts and other audio-visual materials. The majority of courses have a number of corresponding radio and television broadcasts. Scupham (1975) indicated the primary advantage of these broadcasts lie in their ability to disseminate quality instruction to a large audience. The programs enhance the didactic potential of written instruction, particularly in the affective and psychomotor domains. The science and technology faculties of the OU say that the teaching of their subjects at a distance is simply infeasible without the use of televised laboratory demonstration (Scupham, 1975).

Both the radio and television programs are broadcast in the early morning or late at night for 20 and 25-minute durations respectively.

The total programmed transmission time per week in 1982 was 35 hours for television and 19 hours for radio. Growth in the number of courses, however, now makes it difficult to broadcast those programs properly. Because of the shortage of transmission time and the inflexibility of the total transmission schedule, the average overall viewing rate for all courses declined from 63.7 percent during 1974-78 to 55.5 percent in 1979. Unless the University is able to find additional transmission time or make use of other appropriate media, this trend is likely to continue (Rumble, 1982).

It was this competing pressure on transmission time that led the OU to examine the use of alternative media technologies. Some courses have already made use of such appropriate ancillary materials as records or tapes, film strips, and slides. In 1977, an audio cassette library service was introduced, by which students could request taped copies of radio programs for their own use. In 1981, a limited video cassette library service also became available, whereby students could borrow a video copy of a television program. By substituting audio or video cassettes for those radio or television programs whose intended audience is relatively small, the OU might be able to ameliorate some of its transmission problems and reverse the decline in its listening and viewing rates by repeated transmission of some programs.

Computerized instruction. From its earliest days, the OU has employed computer-marked assignments (CMAs) as part of the ongoing assessment of its students. The CMAs are believed to be capable of promoting the development of cognitive skills as well as serving an

orientation function. As a rule, students complete their CMAs regularly, which helps them schedule their study and provide information as to possible gaps in their knowledge about the subject matter in question. Hawkridge (1972) concluded the reason why some faculty members make more use of CMAs than they do TMAs is that CMA questions can be multiple-choice.

While CMAs are used generally by the OU, computer-assisted instruction has been introduced only for mathematics courses. About 170 out of 260 local study centers now have computer terminals, enabling those students who take courses that include computing to gain practical experience.

Face-to-face instruction. In addition to the media-based instruction, the OU provides face-to-face instruction through summer schools and local study centers. This method, however, is very limited in that it is only a back-up service designed to support the predominant mode of instruction: media-based (Rumble, 1982).

Of the available facilities for face-to-face instruction, the summer school is most important. Other facilities are available only on incidental, and usually optional basis. The rationale underlying the provision of summer schools is to condense as much face-to-face instruction as possible in a relatively short period of time. Summer schools are offered for one week during the conventional university vacation period. They make use of such local college and school facilities as lodging place and laboratory equipment. Students are thus

provided with the opportunity to immerse themselves in their studies and to meet members of the central academic staff and other students.

McIntosh, Calder, and Swift (1976) remarked that teachers and students alike are usually rather apprehensive of the prospect of attending summer schools: teachers because they must be prepared for a highly concentrated work; and students for similar reasons as well as the problem of having to disengage themselves from other conflicting work and family demands. After the experience, however, most students seem to agree that all the trouble was worthwhile.

While summer schools are held only once a year, the study centers that are based at local schools and colleges are open on weekday evenings and some Saturdays throughout the year. There, students are able to meet for tutorials, counselling, mutual help, and individual and group discussions with tutor-counsellors and course tutors. Study centers also provide a range of resources. Students can watch television or listen to radio programs and gain practical experience on computer terminals. Many of the institutions housing a study center allow OU students to use the library for reference and private study. Another important function of study centers found by Keegan (1980) has been a reduction in the student drop-out rate, primarily due to their continuing concern for students. He concluded the OU has been able to minimize drop-out rates by providing students with tutorial and counselling services through its study centers.

Summary of the Basic Features

The major components of the OU can be summarized as follows:

1. The OU concept originated neither in any systematic study of the educational needs of the adult population nor in response to external pressures nor from public demand, but instead seems to have been established initially as a response to the political motivations, convictions, and political philosophy of the British Labour Party.

2. The primary purpose of the OU is to provide higher education opportunities to those who have been precluded from attending conventional institutions. To accomplish this purpose the OU follows the principle of open access.

3. The organizational structure of the OU was developed from the effort to adapt the traditional academic model to complexities of applying a distance learning system. The decision making process in the OU thus tends to be more centralized than in conventional universities.

4. The staff of the OU is much more diverse than the staff of traditional universities.

5. Most of OU's funding comes from public sources. The OU has been able to keep the average cost per student low primarily through economies of scale.

6. While it has been quite successful in providing alternative higher education to the disadvantaged people, the OU has nevertheless been criticized for its failure to attract applicants from lower socio-economic groups, especially manual workers.

7. Since its inception, the OU has been primarily concerned with degree-oriented programs. In more recent years, however, it is becoming increasingly concerned with offering short vocational courses.

8. The instructional system of the OU is designed to make full use of most modern educational media. The system draws heavily on those existing educational and communications facilities which have proved essential to its system.

Holyoke Community College in the United States of America

The Community College Movement in the U. S. A.

Higher education in the United States is characterized by an extensive and diversified pattern. Each year over half of the nation's three million high school graduates go on to some form of higher education. There are approximately seven million full-time students in universities and colleges, another six million enrolled part-time, four million engaged in some form of correspondence education, and unspecified millions more engaged in various forms of professional and vocational training. To serve this size student population, there are over 1,700 universities and colleges, 1,200 junior and community colleges, and 1,000 technical and vocational institutions. While the universities and other institutions are both publicly supported and privately endowed, there is general acceptance and interchangeability of their academic degrees and awards they offer. The concept of accumulating and transferable credits lies at the heart of the American higher education system. The concept in practice allows students to move, suspend study temporarily, and re-enter the system at a later time.

Typically, the American community college is a comprehensive institution that offers associate degrees and occupational certificates, and a variety of other services to the community in which it is located. The community college developed within the American democratic tradition and land-grant college philosophy, which is based on the effort to reach

a stratum of students for whom higher or even intermediate training would not otherwise have been available (Vaughan, 1983).

The first community college was established at Joliet, Illinois in 1906. By 1922 there were 207 community colleges in thirty-seven out of the forty-eight American states. After the President's Commission on Higher Education for American Democracy had expressed sentiments for universal higher education in 1947, the popularity of the community college increased rapidly throughout the 1950s and 1960s. State legislators in virtually all the states were found willing to support the inexpensive community college system with their politically appealing open door policy. At the national level, various student aid grant programs enabled people to attend state-supported community colleges at little or no cost (Cohen & Brawer, 1984). By keeping expenses low through state and federal aid programs and by providing a variety of socially valuable services, community colleges have contributed much to the democratization of higher education in the U. S. A.

Brief History of Holyoke Community College

The introduction of a community college system into Massachusetts started relatively late. Massachusetts has a strong tradition of private, independent colleges that has inhibited the development of a state-supported higher education system. Massachusetts did not open its first state community college, Pittsfield's Berkshire Community College, until 1960.

Holyoke Community College (HCC) was established in 1946 as a municipal junior college by the City of Holyoke to meet the educational needs of Western Massachusetts World War II veterans. Under the direct supervision of the Holyoke School Committee until 1964, The college has had to fight for its very survival with tax-conscious mayors and city councils, who have demanded that it operate at little or no expense to the local taxpayer (Taylor, 1969). In the beginning, the College offered primarily liberal arts transfer courses. Students commuted from over fifty communities in the vicinity of Holyoke. The majority of its faculty moonlighted from full-time jobs at surrounding four-year colleges and the University of Massachusetts.

Holyoke Junior College became Holyoke Community College in 1964. Since then state support and control has allowed a significant decrease in the cost of tuition. It has also allowed for a great expansion of curriculum offerings, especially in occupational areas. Specific federal and state grants that were introduced in the 1960s have also encouraged the broadening of curriculum offerings and the support of many other aspects of HCC.

The College built its extensive present campus after a disastrous fire in 1968. The modern and commodious facilities have allowed greater curriculum offerings, especially, again, in occupational and career-oriented fields, and have attracted a larger student body. At present, HCC is a comprehensive, community-centered institution, that serves over 5,000 students through more than 400 full and part-time employees. It

also offers its resources and facilities to individuals and community groups as a center for cultural, professional, and community activities.

HCC is open in the sense that it has no formal entry requirements; it offers higher education at low cost; and it employs a number of nontraditional methods of instruction.

Purpose and Objectives

The purpose of HCC is "to provide educational opportunities above the secondary level for students whose backgrounds, academic endeavors, and vocational pursuits are diverse in nature" (Holyoke Community College [HCC], 1985a, p. 5). To implement this purpose, the College has designated the following institutional objectives:

> - to provide educational opportunities for students who wish only two years of collegiate study broad enough to give them a better understanding of themselves and the world in which they live;
> - to provide for students in transfer curricula the equivalent of work in a senior institution so that they may transfer to another college or university;
> - to provide students in occupational curricula the opportunity to develop a level of skill sufficient to enable them to function effectively in their chosen vocation;
> - to provide educational opportunities for students who wish to study on a part-time basis through the Day Division or primarily through the Division of Continuing Education; and
> - to provide certificate and/or degree programs for special-interest groups through the Division of Continuing Education, some of which may be in cooperation with outside agencies, business, and industry. (HCC, 1985a, p. 5)

Commitment to these objectives is evident both in recent developments in its instructional program and in its support for student activities. In addition to the liberal arts and science courses that are designed primarily for those who plan to transfer to four-year colleges and universities after graduation, many career-oriented

programs with varied duration have been developed in each academic division. Currently, more than 65 percent of students are enrolled in a career-oriented curriculum.

The College also offers a range of services to help both day and evening students enter the College and achieve their academic and personal goals, and to assist them in making appropriate plans and decisions upon graduation. The Learning Resource Center provides additional help with college work such as free tutoring service for students experiencing academic difficulties.

People in the Holyoke community are also served in many other ways. The Division of Continuing Education endeavors to organize whatever courses are desired by the community, including television courses and special programs for seniors or youngsters. The College also works with the total community on civic and educational projects. In all these ways, HCC fulfills its objectives as a comprehensive community college.

Organization and Decision Making

Massachusetts was the first state to embark on a fully state-financed system of community college with a single policy making board (Dwyer, 1969). All public higher education institutions in Massachusetts are under the authority of the Board of Regents of Higher Education, whose major function is to develop and foster a comprehensive public higher education system of high quality, flexibility, responsiveness, and accountability (Massachusetts Acts of 1980, Ch. 15A, Sec. 1).

However, most policy decisions concerning community colleges actually originate from the Presidents' Council, which is made up of the fifteen community college presidents. The Council meets every month with the President of the State Board serving as chairman. Ideas for policy originating with the Board are referred to the Council for consideration and recommendation, or even disapproval.

As with other state colleges, HCC is governed by the Board of Trustees, which represents the people of the community. The Board acts as a bridge between the college and the community, translating community needs for education into college policies (Cohen & Brawer, 1984). The HCC Board of Trustees consists of eleven members from the Holyoke community who are each appointed to five year terms by the Governor. The Board establishes policies that concern the administrative management of personnel, staff services, and other general business of HCC. In all major academic programs and budgetary matters, HCC is required to follow the guidelines and receive the consent of the Board.

Another related statutory body, mandated by the Education Amendments of 1976 to each local educational institution which receives federal assistance under the Education Act (HCC, 1982), is the Vocational Education Advisory Council. The Council is composed of representatives from the community, including at least one each from business, industry, and labor. It advises all vocational programs at the College, particularly with reference to the establishment of new programs. In addition to this Council, HCC encourages individual vocational programs to organize their own program or craft committee to

advise on specific programs or several related programs in the occupational cluster. These committees enable HCC to offer curricula relevant to what is actually needed in the work place.

All issues of college-wide importance are considered in the monthly meetings of the Board of Trustees. More specific issues, for the most part, are left to the discretion of the divisions.

While the College's organization and decision making structure is relatively centralized, the representative nature of its community based committee helps to keep the College responsive to the educational needs of its community.

Staff

The staff composition of HCC is much more diverse than that of conventional four-year colleges in the U. S. A. In addition to the full-time teaching staff for day students, there are equally as many part-time instructors in the continuing education programs. The many volunteer part-time staff from the community allow some programs, particularly for senior citizens, to be run very cheaply.

The College provides a wide variety of counselling services to its students. Areas covered are personal, crisis intervention, stress management, assertiveness, pre-admissions, career planning and placement, academic, transfer, test anxiety, and many others (HCC, 1983a). Since most HCC students are nontraditional, many have needs for specific kinds of psychological, pedagogical, and financial support not usually offered at ordinary colleges (Kinsey, 1975). Such counselling

services are especially important for the diversity represented in HCC students.

Other regular staff include telecourse producers and technologists, computer laboratory instructors, and staff for cooperative education and the Learning Resource Center. Because of specific needs and gaps in HCC staff preparation in several of these areas, a number of in-service training programs offered by central staff or outside consultants have been developed and played an important part in overall staff preparation.

Finance and Costs

As is the case with all public higher education institutions, HCC is mainly financed through public funds. Almost 90 percent of its funding comes from the state, while the remaining 8-10 percent from the federal government. While all student tuitions return directly to the state's coffers, their total is only about one fourth of what HCC receives for its operation. Student fees make up a very small proportion of total funding, about 1 percent. The average cost per full-time student is about half that of the public four-year colleges and universities and less than 10 percent of private colleges.

Many community college leaders advocate a no-tuition or a low-tuition policy for their institutions, which they argue are natural extensions of free public schools. However, their views are not usually shared outside their own institutions. The pressure for increasing tuition usually comes from state legislators, who are constantly seeking ways of holding down appropriations. Their argument has been that

students who benefit from going to college be the ones who pay and that they will be inclined to take their education more seriously if their own money is invested. The counterarguments advanced by others are based on the idea that the entire population benefits when more of its members have been properly educated, and that it is inequitable if low-income students are forced to pay the same tuition as wealthier ones. Such charges represent a higher percentage of family income for the former. In any event, state policy almost invariably fixes community college tuition at a lower rate than that for the public senior institutions, because most legislators subscribe to the argument that community colleges serve as a low-cost alternative to higher education (Cohen & Brawer, 1984).

Student Characteristics

Holyoke Community College follows the principle of open access, by having no formal entry requirements. However, those students who intend to enter a transfer program are supposed to have satisfactorily completed high school or its equivalent. The target student population, however, consists of those who are denied access to further education because of their level of prior educational attainment or poverty.

In the fall of 1985, there were 3,253 students enrolled in the Day Division of HCC, about two thirds of whom were full-time taking twelve credit hours or more. Younger students continue to predominate the total enrollment: 38 percent of the students were under 20 years of age, the overall average age being 24 years. Whether due to greater

availability of time or other factors, women students outnumbered men by a ratio of 1.7 to 1.

With respect to their socio-economic background, roughly 50 percent of HCC students come from families in the lower middle income range, and approximately 12 percent come from families whose income is below the poverty level. Minority groups have been consistently underrepresented at HCC, although their proportion has increased from 1.9 percent in 1981 to 6.6 percent in 1985 (HCC, 1985d). This figure is far below the average percentage of all two-year colleges in the nation and that of all two-year colleges in Massachusetts, which were 22.4 and 7.6 percent respectively in 1978 (Gilbert, 1979). The College acknowledges this statistic as reflecting several contextual factors: the demographic characteristics of the community, the barrier of language for Hispanics in Holyoke, and the social pattern that has established Springfield Technical Community College as a desirable campus for Black students (HCC, 1985d).

As noted earlier, disadvantaged people face numerous barriers in their effort to continue education: isolation, previous educational failure, and/or poverty. Considering this, HCC makes specific efforts to attract those disadvantaged students. The College holds a number of area and regional college fairs where prospective students learn about the College. Admission Office staff visit high schools in the surrounding communities. Faculty and members of the Cooperative Education staff also visit high schools and other community service agencies. Once a potential student has expressed interest, an

educational counsellor help the student individually or in a group identify personal goals and match the student's needs with what HCC can offer.

The average rate of graduation, from 1981 to 1984, of full-time students entering two years prior to the date of graduation was 47 percent. Among the graduates, more than a third transferred to senior institutions. A follow-up survey of the 1983 graduates indicates that 37 percent of the 616 graduates who responded were continuing their education at four-year colleges and universities, while 53.7 percent had found employment on a paraprofessional level (HCC, 1985d). These statistics indicate that the HCC program has experienced some success in providing a second chance gateway to occupational advancement or a complete college education.

Course Structure and Curriculum

The College offers two kinds of programs: one for students who intend to transfer to the upper division of a baccalaureate degree program, and one for preparing students for a variety of career positions for which an Associate Degree is necessary or desirable. Both of these programs include studies in the Humanities; Business; Social Science; Biological Science; Health Science; and Mathematics, Physical Science, and Technology. A minimum of 60 semester hours are required for an Associate Degree.

Transfer programs. The transfer curricula are designed for students who plan to transfer with full credit to a senior college or university after completion of one or two years of study at HCC. The

courses offered in these curricula are generally those required to provide a broad educational background before beginning specialization in a major field of study. These courses are specifically designed to fulfill the requirements of the Commonwealth Transfer Compact to facilitate successful transfer.

Career programs. Career programs are designed for those who intend to complete a program of college education in two years, or who have decided to enter one of the many semi-professional careers now available in business and industry for which two years of college education provide sufficient preparation. They offer a general education to provide students with a better understanding of the world in which they live and specific preparation for a particular occupation.

Continuing education and community services. These activities are concerned with identifying current and potential community needs, organizing appropriate resources from the College and community, and creating appropriate educational programs. With its broad ranged curriculum, the Division of Continuing Education offers the basic courses required for associate degree programs as well as other courses for personal and professional enrichment. Various credit and non-credit courses are offered during the day and evening hours in the Fall, Spring, and Summer sessions. A wide range of non-credit community service workshops, lectures, conferences, community forums, and other special programs are also offered by the Division of Continuing Education. In addition, the Division of Continuing Education has offered a number of television courses since 1976 through a public

television station in Springfield, Massachusetts. Courses packaged as telecourses include Psychology, Sociology, Management, Finance, and History of Vietnam and U.S. Government (HCC, 1983a).

In recent years, HCC has offered more non-credit community service courses through the Division of Continuing Education. There has also been a major increase in the day-long workshop format for professional development courses (HCC, 1984). The College has been trying to meet the educational needs of its community through such courses.

Instructional Methods and Media

Holyoke Community College has developed a student-oriented approach which tries to adapt the institution to the student rather than assume the student should adapt to the institution. In attempting to implement such an approach, there has developed an inevitable tension between the need for some outer direction and institutional control on the one hand, and the objective of maintaining a responsiveness to student desires and initiative on the other. Accepting the necessity and desirability of this tension, the design and methods of HCC programs as a whole represent an effort to assure that the latter objective will not be submerged by the usual forces of institutionalization.

In principal, HCC assumes that the relevance and motivation for study will be greater if the student plays a significant role in determining the design and objectives of his career plan or degree program. It is also believed that learning will be more effective and continuous if a student can learn how to learn and be his own

educational programmer. However, the manner in which such concepts are applied differs between courses and degree programs.

While the principal method of instruction is face-to-face teaching on campus, a number of television courses are organized and cooperative education is available for students who want to develop appropriate work skills needed for success in their chosen fields. A multi-year program of activities to utilize computer-assisted instruction has been recently developed, and up to thirty credits can be awarded for prior learning.

Face-to-face instruction. Face-to-face instruction is the principal method of instruction of HCC. All candidates for the associate degree must earn at least thirty semester hours at the College (HCC, 1985a). While occasionally individual or small group projects are undertaken, the more typical mode of instruction involves lectures, demonstrations, discussions, and laboratory works on campus. Recently, audio-visual materials have seen increased use as supplementary aids for courses.

Television courses. Since 1976, the Division of Continuing Education has offered courses on a public television. The courses consist of weekly televised lessons, reading and other assignments, and three or four on-campus meetings for orientation and examinations (HCC, 1985b). Each lesson is aired twice for the convenience of the viewer. The Audiovisual Center of HCC maintains a review file of lessons for viewing or review by students at a later date. Students can call or visit the instructor if extra help or additional information is needed. Two or three 3-credit courses are offered each semester in the fields of

Psychology, Sociology, Management, Finance, and History. Because of high production costs, HCC mostly uses programs that have been produced by external organizations. Only one course, Home Gardening, has been produced by HCC thus far. Grants to fund a half-hour pilot for a new telecourse are now being sought.

Computerized instruction. HCC has recently begun to develop computerized instruction as a part of the Long-Range Plan which has been in effect since 1983. Its goal is to provide access to a collegewide system that facilitates computer familiarity, computer-assisted instruction and training (HCC, 1983b). A College Computer Committee was organized to develop and implement a multi-year program of activities designed to enable faculty to utilize computer-assisted instruction and training. A number of seminars and workshops, including a week-long workshop on computer-assisted instruction, have been developed to introduce computer concepts and applications to faculty and staff. A microcomputer laboratory was opened in 1983.

Since then, the nursing faculty has integrated computer-assisted instruction as a model program into the majority of courses in the nursing curriculum. Students can review concepts presented in the classroom, respond to simulated clinical situations, and practice such clinical skills as blood pressure monitoring in the nursing computer laboratory. The potential use of computers for testing purposes is also being explored (HCC, 1985d).

However, there have been many problems in this process. The most critical is that the present amount of equipment and facilities

available can hardly support present levels of usage. After examining the computer hardware and software needs of the College, the Computer Committee concluded it would be inappropriate to develop additional training programs which encourage more faculty to implement computer-assisted instruction (HCC, 1985d). The Committee suggested that if HCC is to encourage the development and implementation of more computerized instruction, then new facilities be created and additional microcomputers and computer terminals be acquired.

Cooperative education. Another important mode of instruction at HCC is called cooperative education. Cooperative education simply means learning by doing. It provides an opportunity for students to apply what they learn in the classroom, gain valuable work experience in their chosen field, or explore an alternative career. Begun in 1906 on an experimental basis for engineering students at the University of Cincinnati, cooperative education has been recognized as an efficient way to bridge the gap between school and work, and to prepare young students for future career and adult responsibilities (Stadt & Gooch, 1977). Variously called experiential learning or work-experience education, cooperative education has the value of making higher education and training possible and attractive to many people who would not otherwise go to college (Heermann, 1973). Co-op employment opportunities enable many to attend college who could not otherwise finance their education and obtain academic credits in cooperative education programs without having to attend class regularly.

Cooperative education has grown steadily at HCC over the past twelve years. All six academic divisions currently offer cooperative education. Students of all but three of the 28 degree programs who have completed a year of education on campus can participate in the program (HCC, 1985c). During the 1984-85 academic year, 571 students, representing more than 50 percent of all students classified as sophomores, and more than 300 employers have participated in the program.

In addition to the above benefits to students, the cooperative education program provides a strong link between HCC and the local business community. It is an effective means of gathering timely data on employer needs and student preparedness. It also increases faculty awareness of career ladders and the specific skills employers are seeking. Cooperative education employers provide valuable feedback which can help the College maintain a contemporary assortment of curricula. Furthermore, the relationship with area employers developed through cooperative education can lead to other opportunities for HCC to develop training programs for a company or industry.

Cooperative education has become an integral part of the academic offerings of HCC and an important aspect of the College's mission. This program distinguishes HCC from the other colleges in the service area. Since it is the largest program in terms of enrollment in the public sector in Massachusetts, cooperative education makes HCC unique within the Commonwealth's system of higher education.

Cooperative education, however, requires many ongoing efforts, if it is to continue as an institutional program. Curriculum-related placements, appropriate supervision by qualified faculty, and seminars that link theory to practice are the essential elements which determine program quality and attract students and employers. A sufficient number of suitable job placements should be developed within the college's service area so that participating students can be placed in appropriate positions which reflect their interests and needs. Intensive student recruitment efforts are needed to increase enrollment so that low-enrollment courses can become cost-effective. In addition, while adjustments in the organizational structure, staffing level, and operating procedures may be warranted as a college makes the transition from the program growth to the maintenance stage, it is important that the standards which have shaped the program not be compromised.

Credit for prior learning. Another mode of nontraditional access available at HCC is the granting of academic credit for prior learning through the College Level Examination Program (CLEP) and Challenge Examination. The very concept of prior learning recognizes the changing learning needs of an adult population, which represents the accumulation of a far more diverse learning experience than higher education has had to deal with in the past. As Heeger (1983) pointed out, the development of the prior learning concept represents one of the most important decisions that higher education has ever made.

The CLEP is a national examination system administered by the College Entrance Examination Board located in Princeton, New Jersey.

There are two types of CLEP examinations: the General Examinations and the Subject Examinations. The examinations are based on typical courses in a variety of colleges throughout the U. S. A. Both measure factual knowledge and understanding, as well as the ability to see relationships and apply basic principles to new problems. HCC students, whose education has been interrupted for at least three years since the time of their attendance at or graduation from high school, may earn up to thirty semester hours toward an associate degree through the CLEP (HCC, 1985a). The CLEP examination, however, cannot substitute for a laboratory science course at HCC, although CLEP examinations in science are available. This policy seems rather rigid for students who may possess considerable knowledge of science from life experience, since two science courses are required of every student regardless of a student's individual curriculum.

In addition to granting credit for satisfactory performance on CLEP examinations, HCC grants transfer credit for satisfactory performance on Challenge Examinations produced and administered by HCC. These examinations are not offered for courses already tested by CLEP Subject Examinations or for such courses as studio art and music performance which seek to improve skills rather than impart a body of knowledge (HCC, 1985a).

Summary of the Basic Features

The distinctive features of the community college system as seen from the perspective of HCC can be summarized as follows:

1. Holyoke Community College was originally established to meet the educational needs of veterans returning from the Second World War. As such, it has received strong political support from state legislative, which has been willing to support the concept of inexpensive community colleges with their politically appealing open door policy.

2. The primary purpose of the community college is to provide higher educational opportunities to its community population through both comprehensive career-oriented as well as liberal arts and science programs.

3. In addition to the usual organizational structure found in any U. S. institutions of public higher education institution, HCC has a number of advisory committees in its occupational cluster which serve to represent the needs and interests of the community.

4. The staff composition of HCC is characterized by its strong counselling orientation that has proven necessary to serve nontraditional students in many diverse areas.

5. As most of its funding comes from state and federal government sources, HCC is able to offer a low-cost alternative to higher education for its community, while the research data is not complete.

6. Most HCC students seem to fall into the category of its intended disadvantaged target population. Minority representation, however, continues to fall short of community census data.

7. As a response to community needs, HCC offers various community-oriented continuing education programs in addition to the courses that lead to an Associate's Degree.

8. While its principal method of instruction is through face-to-face teaching, HCC has developed a number of such nontraditional methods of learning as cooperative education and television courses. The College also has innovative policy of granting transfer credits to students for prior learning experience through CLEP and Challenge Examinations.

Lessons from the Case Studies

The Open University of the United Kingdom and the Holyoke Community College of the U. S. A. each represent different approaches to open learning, while they both have adopted the same principle of open access to higher education. The OU can be considered an innovative and full-blown attempt to provide higher educational opportunities nationwide through a multi-media based instructional system, while HCC demonstrates how open learning can be promoted under more restricted conditions. Acknowledging some limitations, these programs appear to have adapted to the particular socio-economic contexts of their respective areas and populations served, and have contributed much to the democratization of higher education. Although each and every aspect of their programs cannot automatically be adapted to different situations, they nevertheless offer some useful lessons for the development of open learning systems in such other countries as Korea.

1. An important force for shaping the development of both the OU and HCC has been the strong political support of government and the

legislature. This conclusion is particularly true in the OU case. While its success might be attributable to many factors, undoubtedly one of the most important has been the political support shown for the project from the very beginning. This consistent support permitted an exceptionally long and helpful institutional planning and implementation period. During this developmental period, planners were able to build strong foundations for the new university. As for HCC, with its philosophical roots in the American democratic tradition - everybody should have an access to higher education - a wide variety of academic and community-oriented courses are offered at low cost.

Since open colleges were established primarily to serve working youths and adults, the availability of a low-cost alternative to higher education is critically important to disadvantaged people especially in an age of rising tuition costs. This alternative is not possible without the political support of government and the legislature.

2. The exemption from academic entry qualifications would also appear to be relevant to the efforts of Korea's open colleges to serve the needs of its adult population without a high school diploma, but with the life experience required to pursue higher education. Such comprehensive student support services as supplemental tutoring and counselling should also be made available to those students. Otherwise, many may become frustrated, fail, and leave because the system of such an institution is oriented more for traditional students to succeed rather than nontraditional.

3. The organizational structure of the OU and HCC seems to provide effective service to their respective students. The lay governing bodies of both institutions are important to their efforts to be responsive to the needs and demands of the target population they are supposed to serve. The advisory committee of HCC provides useful information on jobs, careers, and community needs, which helps in the process of adapting the curriculum appropriately.

4. Both the OU and HCC operate on a credit system. The system allows for a wide range of choice to be experienced by students and thus encourages breadth of study. Students can elect to blend various alternative courses into their own degree programs.

In addition to its degree programs, HCC offers a variety of short vocational and community service courses through the Division of Continuing Education. The OU, which since its inception has been concerned primarily with degree-oriented and general education curricula, has also begun to concentrate more on short vocational courses. To serve more people, especially those with low-incomes, it would be necessary for Korea's open colleges to offer various continuing education programs without the prerequisite of a high school diploma.

5. The instructional system of the OU and HCC seems to be appropriate for their respective educational and social contexts. The OU has developed a multi-media based distance learning system to serve a large population nationwide, while HCC has developed more campus-oriented instructional system with a number of nontraditional modes of instruction to serve a relatively small community.

The most impressive aspect of the OU is its integral use of a large range of communications media and services. By making each of these play a precise and efficient role in a well-designed system, it has tended to demystify university education and democratize higher education. In this vein, OU has found it necessary to move away from the extensive use of radio and television broadcasts toward the provision of audio and video cassettes because of the lack of transmission time and the inflexibility of the transmission schedule.

At HCC, media-based instruction has not been developed comparatively well. The primary method of instruction remains face-to-face teaching on campus. Television courses are available only through a Continuing Education programs. Computerized instruction is now at the beginning stage. The College, however, has developed a strong cooperative education program. Through this program, HCC can offer practical and relevant education to the community and can attract more economically disadvantaged students by lowering financial barriers. Another important aspect of HCC's instructional system is the granting of academic credit for prior learning through CLEP and Challenge Examinations. These examinations motivate many nontraditional students to continue their education towards credentializing, whether in the form of certificates or degrees.

It may also be possible for Korean open colleges to develop varied kinds of instructional methods. However, it should be noted that these instructional methods need to be suitable for their own educational and social context in order to be used to their fullest capacity by their

students. This issue will be discussed in the succeeding chapters of this study. Before that, however, the next chapter will examine the development of Korea's current open colleges in order to understand their rationales and current practice.

C H A P T E R V

THE DEVELOPMENT OF OPEN COLLEGES IN KOREA

Introduction

Since the introduction of a western educational system around the end of the nineteenth century, education has played an important role in Korea's twentieth-century transition. In recent years, the development of education in Korea has been a notable accomplishment. Primary education has become universal, while a substantial proportion of the relevant age groups attend middle and high school. The opportunity to attend higher education has also been greatly expanded. But schooling has come at a high cost; and there are many who have missed the chance of pursuing formal education for socio-economic and other reasons. In the effort to combat this problem, Korean educators since the 1960s have turned to open forms of learning.

The concept of open learning was introduced into Korean society in 1972 with the establishment of the Korea Air and Correspondence College (KACC) at Seoul National University. Since then, KACC has been an important institution of higher and continuing educational opportunity for those who, for various reasons, have been unable to continue their tertiary education. High school correspondence education was initiated in 1974 with the establishment of two correspondence schools affiliated with regular high schools. Besides the KACC, which offers courses mainly in the field of social science, a technical open college was

opened in 1982 with a view to providing vocational and technical higher education to working people. Since that time, a number of other open colleges have been established due in part to the initial success of the technical open college.

This chapter explores the reason why open colleges have been developed in Korea and examines their current practice. After a brief description of the country's national context, the development of education in Korea is examined in a historical perspective. The system of higher education will be examined in more detail, since the study is focused primarily on post-secondary education. The chapter then discusses the rationale for Korea's open colleges and assesses their current practice. Finally, a number of issues and problems to be addressed are identified for their further development.

The National Context

The Korean people occupy a peninsula extending south from the northeastern part of the Asian continent. About 80 percent of its land area is mountainous, and its population of 40 million (1985) lives mainly in the densely populated urban areas. Korea has a democratic form of government with a capitalistic economic system, adequate travel and communication facilities, and ample public broadcasting services. The national communication corporation, Korea Broadcasting System (KBS), has three television and four radio networks with national coverage, which are supplemented by 26 radio and 10 television companies around the country (The Broadcasting Commission, 1983). Two complete channels

are devoted to education, one in television and one in radio, besides large volumes of quasi-educational material in other program services.

The only and official national language is Korean, an Ural-Altaic language written with 24 Korean characters called Han-geul, which was invented early in the 15th century by a royal commission appointed by King Sejong. The simplicity and practicality of the phonetic alphabet has in part permitted Korea to achieve a literacy level of more than 90 percent in the short period of time since World War II (Hong, 1983).

In more recent times, vigorous growth and development has characterized Korean life. The gross national product (GNP) when adjusted for inflation increased at an average rate of 11 percent a year during 1965-70, and at about 10 percent throughout the 1970s. Even though the country has few natural resources, growth has been achieved through rapid industrial expansion and the application of human resources to manufacturing. Education and training have also come to play a more important role in Korea's economic development than in many other countries. Indeed, the nation's greatest asset today is its literate, skilled, and highly motivated labor force.

Korea is one of the most educationally conscious and competitive countries in the world. Over 20 percent of all public expenditure is spent on education, and additional large amounts are contributed by industry, charitable foundations, and informal groups. Private institutions are numerous and very important, particularly at the post-secondary level. Although tuition fees are charged after six years of primary education and there are virtually no educational grants to

students, about 27 percent of the country's population is enrolled in schools.

Education confers substantial benefits both directly in the form of jobs and promotion, and indirectly in social esteem. The efforts made by individuals and their families to acquire education are indicated by the high proportion of private expenditure paid as fees to secondary and higher educational institutions.

The roots of Korea's high social value for education lie far in the past. In medieval times, the influence of Chinese culture, especially the guidelines for social ethics, education, and government of Confucianism, led to a high public respect for the educated literati and literacy, and the aptitude for elegant poetic composition. The Yi dynasty, Korea's last kingdom which endured over 500 years (1392-1910) and established Confucianism as the state religion, helped cultivate the educational aspirations of the people by instituting a Confucian focus in both the schools and the government's civil-service examination system.

Development of Education in Korea

Education in the Pre-Modern Age

Korea's educational institutions date back to the three kingdoms - Koguryo (37 B.C. - 668 A.D.), Paekche (18 B.C. - 668 A.D.), and Silla (57 B.C. - 935 A.D.). The first was the Taehak in Koguryo, a state preparatory school for aristocratic youth established in 372 A.D. who were to assume prospective government offices (Han, 1971). The curriculum consisted mainly of Chinese language and Confucian classics.

Soon afterwards, private institutions, called hyangdang, were established in which youth, mainly aristocratic but some non-aristocratic as well, learned archery as well as Chinese classics and literature.

An educational activity which was peculiar to the Silla kingdom was the training of Hwarang, groups of aristocratic young men dedicated to serve as statesmen and military leaders. Culture, history, philosophy, literature, art, music, and military techniques were among the subjects included in the curriculum (Han, 1971).

A momentous influence on Korean education was the introduction of the civil service examination system from China in 957. The examination was composed of a set of tests covering Confucian literature. The test was used to determine who would obtain valued posts in the government bureaucracy. Those who passed the examination joined the ranks of the yangban, the civil and military officialdom. Schools were organized to serve the examination system.

The education system of the Koryo(935-1392) and Yi dynasty was similar except for the huge expansion in the number of private schools called sodang during the Yi dynasty. Sons of yangban officials, and a small number of those of lower rank and ordinary citizens at the age of 7 or 8 could enter a sodang, which can be described as a type of 8-year elementary school found in almost every village or city. Here, young boys began their study of Chinese language and literature, with their emphasis on Confucian topics. At the age of 15 or 16, they could enter a state secondary school called hyanggyo, four of which were located in

Seoul, with others in every district, each enrolling about 200 students. Graduation from a secondary school qualified a student to sit for the lower civil service examination. The national university in Seoul, called Songgyun'gwan, was the most prestigious of the nation's educational institutions, admitting 200 students annually to prepare for the advanced civil service examination (Han, 1971).

This system of education lasted until 1894, when a new secular school system was set up and became the principal education system for the country thereafter. Traditional schools, however, were not converted into secular ones. Rather, the village primary schools (sodang) and provincial secondary schools (hyanggyo) were left intact. The college for training officials (Songgyun'gwan) was renamed the School of Chinese Classics and allowed to continue teaching Confucian topics (Thomas, 1983).

The education system of ancient Korea had several characteristics. First, it was organized to prepare aristocratic youth for prospective government offices. Hence, it was an elitist educational system, available only to a small segment of the population. The majority of the people, the peasantry, remained illiterate and depended on their participation in family and community life for the knowledge they acquired. The system was also closely related to the civil service examination system. The major purpose of study was to prepare students for the examination.

Second, all educational institutions, ranging from the village sodang to the Songgyun'gwan in Seoul, were open only to males. Females

were completely excluded. Any purposeful education girls received was either from their fathers or obtained by reading the books their brothers were using in their schools.

Third, the curriculum consisted mainly of Chinese language and literature with emphasis on Confucian topics. All the texts were written in Chinese characters, although Korea's own written language had been invented early in the 15th century. The curriculum was also highly theoretical in orientation with little emphasis on practical or technological components.

Advent of Modern Education

The advent of modern education in Korea began in 1886, when the government-endowed Yugyeongkongwon, or the Royal English School as it was also called, was established in Seoul (Jayasuriya, 1980). Staffed by American missionary teachers, it taught English, mathematics, natural science, history, world geography, and political science. A number of missionary schools and private schools were established following Yugyeongkongwon.

However, further development of Korea's modern education was interrupted by the Japanese occupation for 35 years. The Japanese colonial government set up a new school system which was intended to favor the Japanese who were then immigrating into Korea in ever-increasing numbers. By 1919, there were 42,767 Japanese pupils attending 379 schools, while 88,827 Korean students were enrolled in 531 schools. There were only 366,812 Japanese residents in Korea, compared to 20 million Koreans (Han, 1971). In effect, 13 percent of the general

Japanese population were in school, but less than half-of-one percent of the Koreans were receiving formal education. Furthermore, few Koreans were allowed to advance beyond the primary level, while secondary and higher education were primarily available to the Japanese.

Thomas (1983) summarized the characteristics of the Korean education system under Japanese rule as one with "strong centralization of control, favored opportunities for Japanese children, and a reduction in the extent of Christian missionary education" (p. 194).

The Current System of Education

Korea developed its current system of education after the end of World War II. The system comprises the following levels:

- Primary school (grades 1-6), compulsory for ages six to eleven.

- Middle school (grades 7-9), for ages twelve to fourteen with open entry for all primary school graduates.

- High school (grades 10-12), for ages fifteen to seventeen with entry from middle school on a selective base. High schools are either general, emphasizing arts and science; or vocational, emphasizing technical, commercial, agriculture, or other vocational studies.

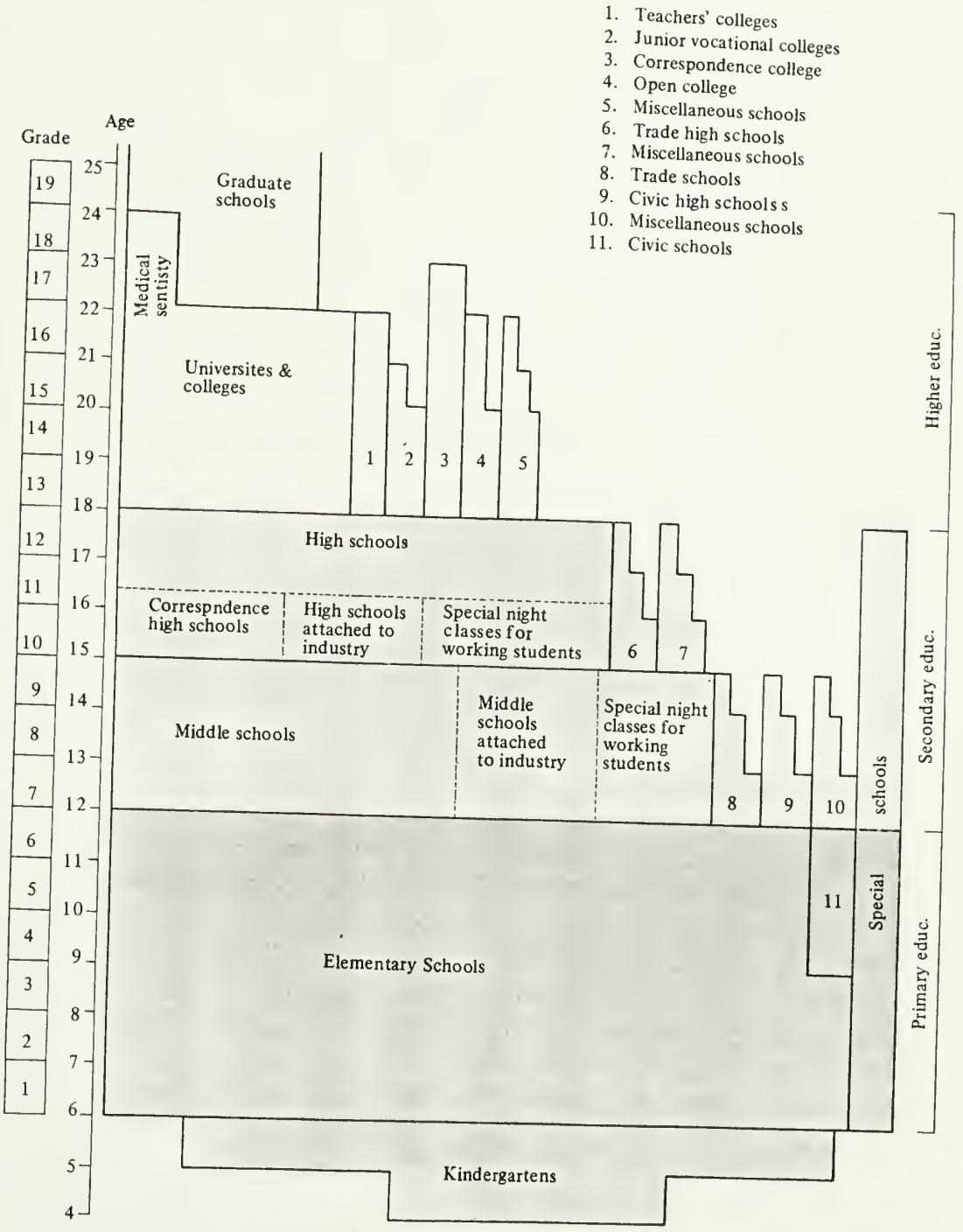
- Higher education on two levels, with competitive entry for high school graduates. Junior college education offers two or three-year courses in vocational subjects. University or college education is of four to six years duration, including four-year primary teacher training.

- Nonformal education of various kinds of organized educational activities outside the basic ladder system of formal education.

Institutions of nonformal education include civic, trade, correspondence, and miscellaneous schools at primary or secondary level, an air and correspondence college, and open colleges (Ministry of Education, 1985a).

Figure 1 shows the current system of education in Korea.

Figure 1. The current education system of Korea.



Source: Ministry of Education. (1985a). p. 27

Korea has a experienced remarkable growth in education, especially at the secondary and post-secondary levels, during the decades since World War II. Table 1 shows the expansion of education in Korea.

Table 1

Expansion of Education in Korea, 1945-1984

Level	Year		
	1945	1970	1984
Schools			
Primary school	2,834	5,691	6,528
Middle school	166	1,608	2,325
High school	307a	889	1,549
Higher education	19	168	255
Total	3,019b	8,356	10,654
Students			
Primary school	1,366,024	5,749,301	5,040,958
Middle school	80,828	1,318,808	2,735,625
High school	40,271a	590,382	2,092,401
Higher education	7,819	201,436	1,130,074
Total	1,454,671b	7,859,927	10,999,058

Note. a. These numbers are those of 1951.
b. These numbers do not include those of high school.

Source: Ministry of Education. (1985a). p. 20

The number of schools increased from 3,019 in 1945 to 10,654 in 1984 and the number of students increased 1.5 million to 11 million.

Attendance at primary school is free and compulsory. Above this level tuition fees are charged. Free and compulsory middle school education was introduced in the rural areas in 1985, and is to be extended throughout the nation by 1991. In 1984, 98 percent of the primary school graduates moved on to middle schools and 88 percent of those who completed junior secondary course advanced to senior high schools (Ministry of Education, 1985a). About 30 percent of high school leavers enter universities and junior colleges.[1]

There are three types of educational institutions in Korea: national, financed exclusively by the central government; public, financed jointly by the central and local government; and private, financed by private organizations or individuals. Responsibility for educational administration in the public sector is shared between the Ministry of Education and regional boards of education, which operate in the nine provinces and four largest cities. These governmental bodies bear a considerable portion of public education costs at the lower levels of schooling, while private funding shares an increasing amount at the higher levels. Table 2 shows the distribution of enrollments among national, public, and private institutions in 1983.

Table 2

Enrollment Distribution in Korean Educational Institutions, 1983

Level	Total enrollment	Distribution (percent)		
		National	Public	Private
Primary school	5,257,164	0.3	98.3	1.4
Middle school	2,672,307	0.2	65.3	34.5
High school	2,013,046	0.9	39.6	59.5
Higher education	1,013,684	23.8	0.5	75.7

Source: Ministry of Education. (1984). pp. 33-40

While the remarkable growth in education at all levels has greatly expanded educational opportunities, it also has its negative aspects, including: some primary schools in large cities have to operate on the shift system; class sizes are large, up to sixty students a class in some middle and high schools; the curriculum in the general schools is overacademic; opportunities are greater in urban than in rural areas; there is little provision for part-time evening schools; and entry into colleges and universities is highly competitive and restrictive.

The Higher education system. Higher education in Korea comprises the following:

- Universities and colleges, whose task is to discover, preserve, and impart knowledge through research and teaching, and to prepare the

professionals needed by the nation. There were 98 colleges and universities with an enrollment of 772,907 students in 1983, 77 out of which were private ones enrolling 566,165 students.

- Teachers' colleges, whose function is to train teachers for primary schools. Secondary school teachers are trained in a college of education in colleges and universities. There are 11 teachers' colleges, all of which are nationally endowed.

- Junior vocational colleges, which offer two or three year vocational education. In 1983, there were 130 junior colleges with an enrollment of 216,210 students, 106 of of which were private with an enrollment of 188,531 students.

- Miscellaneous schools, created by private initiative to contribute to the formation of higher level technicians in various disciplines. There were 19 such schools in 1983. (Ministry of Education, 1984)

Higher education in Korea has made progress of epochal dimensions in the last forty years. The enrollment reached the figure of more than one million in 1984, and an average annual growth rate of 13 percent for the period 1945-1984 (see Table 1). Such rapid growth is the result of the decided interest of the Korean Government to develop the educational sector. The manifest trend has been to expand education, particularly higher education, to meet the ever-increasing needs of the people. During the 1960s and 1970s, the rising aspirations of the Korean people for higher education have led to a rapid increase in the number of colleges and universities with little deliberate regard for the nation's

needs and for the impact on the quality of education. A new recognition of the importance of the link between education and the progress of Korean society in the later 1960s and 1970s motivated educational planners to face the task of making higher education to better able meet the developmental needs of the nation and, at the same time, to meet the people's requirements for more advanced education.

Several deficiencies, however, are evident in the current system of higher education. First, the system cannot accommodate all the people who want to receive some form of higher education. Only about 30 percent can be admitted into the higher education system. Hence, the entry examination is very competitive, and its influence is felt backwards down into the primary and secondary levels. On account of the privileged benefits of higher education, this examination assumes critical importance in career of a young person, as its results determine later social status and future expectations. For these reasons, thousands of candidates may be held up for as much as five years while attempting repeatedly to gain entry to the institution of their choice.

Second, the system offers little opportunity for the great numbers of adults and elderly people, who could not attend an institution of higher education in their youth because of the shortage of openings, economic constraints, or for other reasons. College catalogs and brochures are written for the young, and classes are scheduled 9:00 a.m. to 5:00 p.m., Monday through Saturday, which prevents working adults from attending.

Third, the system does not respond to the changing demands for knowledge and skills to meet those needs that have emerged from the nation's rapid economic growth and industrialization. Traditional universities and colleges do not serve the economic system well in the preparation they provide graduates required for the technological careers.

Fourth, the system widens the disparity between rich and poor through its expensive tuition, restricted access to participation in education, and consequential attribution of social benefits.

Finally, the system does not allow for transfers from junior colleges to a four-year college or a university, although many graduates from junior colleges want and are qualified to do so. This results not only in personal disappointment but in the loss of professional manpower for the nation.

In conclusion, education in Korea over the past four decades has grown markedly in both the number of people in formal and nonformal programs, and in the quality of schooling. These trends towards increased amounts of formal education for the entire population and towards flexibility in methods for educational preparation to changing societal demands will apparently continue into the future.

The Rationale for Korean Open Colleges

Open Learning in Korea

As noted earlier, the Korean people have attached an unusually high degree of importance to education compared to many other nations. The remarkable growth of formal education described in the preceding pages

owes much to the positive attitude of Koreans toward education. Rationales underlying the promotion of open colleges should be examined against the background of a people actively seeking economic and social betterment through education.

While the ideal of providing universal schooling opportunities has been achieved by enrolling virtually all children in primary education, by the late 1960s government officials and educators turned their attention to those young workers and adults who had dropped out of school or did not have the opportunities to advance to secondary and post-secondary education. This situation not only resulted in personal disappointment for individuals who wished to advance in economically and socially, but also represented a loss of more highly trained manpower needed for the nation's modernization program (Hong, 1983).

One approach toward resolving this problem was the introduction of radio broadcasts and mail-correspondence courses at both the secondary and tertiary levels in the 1970s. Such education was aimed primarily at providing educational opportunities for those who had missed out on secondary or higher education during their earlier years either because of the shortage of openings or the cost of advanced education.

The Korea Air and Correspondence College (KACC) was established in 1972 to offer junior-college level courses in elementary teacher education, government administration, business administration, agriculture, and home economics. About 80 percent of its current students are employed. Instruction is furnished through daily radio broadcasts and reading materials delivered to students by mail. Texts,

prepared by the college faculty, are supplied for self-study, and regular assignments are allotted, marked, and evaluated. Two weeks of regular attendance during summer and winter vacations are required at one of the fifty higher education institutions for testing and face-to-face instruction. The usual shortcomings, typical of distance learning systems, are also evident at KACC. For example, the experience has been a 40 percent drop-out rate during the first year and a modest overall pass rate of about 30 percent. Nevertheless, more than 34,000 students have graduated over the past ten years, and more than 100,000 applicants are seeking the 30,000 places available in the college each year (Ministry of Education, 1985b).

In 1981, KACC was expanded to a five-year, full university level programs of study, offering twelve bachelor degree courses and one junior-college course in the field of social science.

Based upon this experience, the Korean Government decided to provide similar opportunities for correspondence education at the high school level, even though the need at this level was projected to decline gradually as full-time regular high school education was expanded. The Government approached the Korean Educational Development Institute (KEDI) to plan and operate the necessary services, including developing textbooks, marking, tutoring, and broadcasting. Two air and correspondence high schools were established in 1974, as affiliates of regular high schools. Since that time the number of such schools has grown to fifty and the number of students to 43,794 by 1984 (Ministry of Education, 1985b). The program covers all requirements of the regular

high school curriculum, and uses the same principles and instructional methods and media as KACC.

Because of the successful experience of KACC, a number of junior colleges have been replaced by open colleges since 1982. The open colleges offer course majors in the field of technical and vocational education to those who missed such education in the past.

The Rationale

Open learning programs take many forms and have been developed for a variety of reasons. Some of the most common reasons discussed in Chapter II can also be applied to Korea's open colleges. In addition to those, other reasons as to why open colleges have been established in Korea can be summarized as follows:

1. Establishment of lifelong education system. The new Constitution of Korea, revised in 1980, declares the promotion of lifelong education of the people as one of the responsibilities of the Government. To realize this interpretation of the Constitution, the Government has undertaken several measures, whereby one can continue to acquire new necessary knowledge and skills even after the completion of formal education. One measure adopted since 1982 has been to replace several junior colleges with open colleges.

2. Provision of second chance education. The Korean Government has enunciated equity and social development as the key developmental goals of the series of five-year plans which have been in operation since 1960s. Those who missed the chance of pursuing formal education for various reasons are to be given a second opportunity. It is clear

that there is a continuing demand for education in Korea, especially at the post-secondary level, which cannot be met by traditional institutions, since there is no way to study for an external degree or to study on a part-time basis through existing colleges and universities. To meet these unmet and increasing needs, the Korean Government has established several open colleges to offer technical and vocational education courses, in addition to KACC which offers courses in the social science field.

3. Disillusionment with formal education. Traditional colleges and universities have not been responding to the continuing changes effected in the nation's growing industrial sector. The growing sophistication of modern manufacturing process has, however, called for a change in the numbers and kinds of workers required, with both skilled workers and engineers shifting their attention to more advanced processes, leaving a gap in technical jobs. In recognition of the importance of educating more technicians and retraining others, the Government has established more open colleges and intends to replace more junior colleges with open colleges.

4. Provision of part-time study. Open colleges enable people who cannot pursue education on a full-time basis because of work or family responsibilities to get a degree or certificate through part-time study. By providing an opportunity for part-time study, these colleges contribute to the reduction of the disparity between the rich and the poor, enabling students to earn their tuition while continuing their education.

5. Provision of further education for transfer students. Open colleges admit those who transfer from either junior colleges or four-year colleges and universities. Since there is no opportunity for junior college graduates and drop-outs from a college or university to continue their education, accepting transfers is an important function of an open college.

Current Practice of Open Colleges in Korea

There are currently six open colleges in Korea, three of which are national while the others are private. The first open college, Kyunggi Technical Open College (KTOC), was opened in 1982 with a view to providing technical higher education to working people. Five more open colleges were established in 1984 and 1985, of which four are technical and one a commercial open college. The success of KTOC and the great interest demonstrated by many out-of-school youths and working adults were factors contributing to their opening. The colleges are open in the sense that they require less formal entry requirements than traditional colleges and universities; charge relatively low tuitions; enable students to study on a part-time basis; remain open all the year round by offering Summer and Winter sessions; and are supposed to employ varied instructional methods and media other than face-to-face teaching on campus. This section uses the same education variables that were used in the case studies in Chapter IV to examine the current status of open colleges.

Purpose and Objectives

As noted earlier, the primary purpose of Korean open colleges is to provide technical and vocational higher educational opportunities for working people. The Ministry of Education (1981) outlined the purposes of an open college as follows:

- to expand higher continuing education opportunities to all people;
- to expand opportunities for training technical workers; and
- to establish a lifelong education system. (p. 7)

Similar considerations are found in the Operational Plan on the Establishment of an Open College (Ministry of Education, 1982). The Plan cited several reasons for establishing an open college: realization of lifelong education, renovation of vocational and technical education, expansion of educational opportunity, and reduction of educational costs.

To accomplish these purposes, each college has established its own institutional objectives. KTOC, for example, has stated its educational aims as follows:

- to provide college education opportunities to all people widely;
- to develop an open learning system which can educate all people by overcoming the restrictions of home circumstance, time, place, academic background, age, and so on;
- to provide a special, professional, technical education which is applicable to high level industrial society, in accordance with one's individual situation, attitudes, and desires;
- to establish the open college as a systematic foundation of study and to develop several administrative support systems which are needed for its operation; and
- to establish the open college system as suitable for Korea's real situation, to execute experimental study programs for its further development, and finally to create an operational, organizational model. (KTOC, 1982, p. 3)

The educational objectives of other colleges are similar to those of KTOC.

Whether KTOC and other colleges have been successful in accomplishing their objectives is probably premature to assess at this point since the open college has operated in Korea only for a few years. Yet it seems evident that the open college system has attracted much interest from many people. Two years after the establishment of KTOC in Seoul in 1982, the Nonformal Education Division of the Ministry of Education was still receiving numerous calls and letters asking about plans to establish open colleges in other regions. Although KTOC was still at an experimental stage at the time, the Ministry of Education was forced to expand the open college system to the regions where there was so much demand.

Organization and Decision Making

In Korea, the organizational structure and decision making process of open colleges seems to be more centralized than in conventional colleges. All open colleges are under the direct control of the Ministry of Education. The Ministry is responsible for setting their basic policies, including those of admission, graduation, and the establishment of a study course. It also approves the establishment of new open colleges, and provides their general supervision. The Advisory Committee on Open Colleges, established under the jurisdiction of the Ministry of Education, advises the Minister of Education on important matters concerning the establishment and operation of open colleges in general.

The colleges develop curricula, design instructional and evaluation materials, and develop instructional methods and media. The President of a college represents the college and is responsible for general academic affairs and administration. He is assisted by the Faculty Council and other committees on special matters. The Faculty Council deliberates on matters of admission and graduation, schooling and evaluation, and the award of a degree or certificate.

In order to maintain close relationship with related industries and businesses, the colleges have a College-Industry Cooperation Committee in each major field. The roles of these committees includes: exchange of up-to-date information on the industry; discussion on the relevance of the college curriculum for industrial needs; development of on-the-job training programs for students; and improvement of job opportunities for graduates of the college (Ministry of Education, 1985b). To ensure the fulfillment of these roles, each committee consists of at least two representatives of management from relevant industries and faculty members of that field.

Staff

One of the most difficult tasks that has confronted Korean open colleges was the retraining of the academic staff who had been working for many years in traditional junior colleges. Since many of the tasks which have to be performed in an open college are quite different from those typical working experience of a traditional academic, a training program had to be specially designed for them. However, many faculty members were suspicious of the intended results of training, even to the

point of resisting the term training. Because of the attitude on the part of the faculty towards training, it was not until a full year after KTOC had opened that a training program for faculty was implemented.

In 1983, a 600-hour in-service training program was implemented for the full-time faculty members of KTOC over a period of eight months. Similar programs were conducted in 1983 and 1984 at other colleges. The primary objective of the training program was to introduce the faculty to open learning systems in general and to the specific tasks they were to perform in an open college. Five hundred and forty hours were devoted to individual self-study of reading books and relevant materials, and sixty hours to special lectures, discussions, and workshops led by outside specialists. The participants were asked to submit a paper at the end of the program which would have a bearing on their chances for future promotion.

In addition to regular full-time faculty, the colleges employ many part-time instructors, most of whom are from relevant industries and businesses. This is one of the unique features of Korea's open colleges, not often found in traditional colleges and universities.

Most of the non-academic staff is composed of the general administrative staff, whose number is relatively small, since most of the college's tasks are done by the academic faculty. Therefore, the recruitment and development of the academic staff is of primary importance for the continued development of open colleges in Korea.

Finance and Costs

As is the case with Korea's other higher education institutions, three national open colleges are financed principally by the central government. The other three private colleges are financed by private organizations and individuals. National open colleges receive 50 to 70 percent of their funding from the Government and 30 to 50 percent from student fees. All student tuitions go directly back to government coffers, the amount of which is about two thirds of what a national college receives in return for operational expenses. Therefore, it can be said that about 80 percent of funding actually comes from student tuitions and fees.

Private colleges raise about 90 percent of their funding from student tuitions and fees, and 10 percent from their foundation or endowment. Government support is minimal and usually reserved for special purposes such as staff training.

Student tuition is 13,400 won (about 15 US$) per credit hour for national college students and 23,900 (about 26 US$) for private college students. Tuition increases gradually according to the credits a student registers. The average cost per full-time national college student is about half of that of regular national colleges. The average cost per full-time private college student is about three fourths that of conventional private colleges.

Student Characteristics

The open colleges in Korea were established to serve primarily those industrial workers denied access to vocational and technical

higher education in the past. Hence, the colleges require their applicants to have at least one year of working experience at related industries and businesses. Applicants are not required to take the Scholastic Achievement Examination for the College Entrance (SAECE), which every candidate to traditional colleges and universities including junior colleges must take. The applicant's previous level of academic performance of the applicant at high school is also not considered as a criterion of admission. However, Korean open colleges are not quite open. They still require a high school diploma or its equivalent and select their students through the entrance examination.

In the spring of 1985, there were 20,254 students enrolled in six open colleges. Among them only 2,216 students (10.9%) were female. This ratio was much lower than that of female student representation in all traditional higher education institutions in Korea (that was 35.0%) (Ministry of Education, 1985b). The reason for this discrepancy might be due to the fact that five out of six open colleges are technical colleges. In 1983, 52 percent of the KTOC students were over 25 years of age, that is, more than five years had passed since most students had completed their high school education.

From the standpoint of the Korean Government, the most important question today is whether these colleges really serve the target population, that is, industrial workers, who have been precluded from higher education. It is evident that statistics on the composition of the student body are somewhat satisfying in this regard. Nearly 60 percent of the students were employed, with more than 40 percent in the

industrial sector, although the ratio fluctuated - 42.6 percent in 1983, 52.5 percent in 1984, and 40.6 percent in 1985 (see Table 3).

Table 3

Occupational Analysis of Open College Students in 1983, 1984, and 1985

Year	1983	1984	1985
No. of students	4,725a	6,600b	11,533c
Government officials	8.9	9.4	8.2
Teacher	2.2	4.0	3.6
Manufacturing	15.9	17.9	14.4
Building & construction	10.6	8.5	4.7
Financial business	1.2	3.3	1.9
Electricity & communication	9.9	10.6	5.0
Trade	1.4	1.2	1.1
Military	1.1	7.6	3.3
Agriculture	n.a.	2.8	2.9
Sales & services	3.6	8.2	10.6
Others	11.1	9.5	3.7
Unemployed	34.1	17.2	40.9
Total	100.0	100.2	100.3

Note. The numbers represent percentages.
a. Total number of students of KTOC.
b. Number of new students admitted into four open colleges.
c. Number of new students admitted into six open colleges.
n.a.: not applicable.

Source: Ministry of Education. (1983, 1985b, 1985c).

Course Structure and Curriculum

Open colleges offer undergraduate courses leading to a Bachelor of Science degree as well as other special courses. The curriculum of an open college consists of a general and major program of study. The general program serves as the basic foundation for advanced study. The composition of the major program depends upon the type of college. Technical open colleges offer engineering courses, including mechanical, electrical, architectural, civil, chemical, environmental, and computer engineering, engineering management, and industrial design. A commercial college offers management and business courses such as accounting, trade, management, travel administration, finance, economics, communication studies, and commercial design. The major program is more oriented towards vocational training in order to supply sufficient numbers of properly trained technical workers needed by the nation's growing industrial sector. Many courses are offered in the evening for the convenience of the students who have to work during the daytime, a benefit not easily found in traditional colleges and universities.

Korean open colleges adopt the credit type of progression familiar to American colleges to facilitate movement from one mode of education to another. One example is when a student who has commenced study on a part-time basis later moves to full-time study. The modular nature of the credits approach also provides a wide range of choice for courses. The B.S. degree is awarded to a student who has completed 140 credits and passed the graduation examination administered by the college.

Those who have completed 70 credits may be awarded a junior college diploma.

The special courses are provided to train employees commissioned by a company or industry for a certain period of time. These courses are not offered for credit towards a degree. There are, therefore, no entry requirements. As of this writing, no open college has yet offered a special course.

Instructional Methods and Media

The open colleges of Korea were established to provide an opportunity for technical and vocational higher education for working people above the usual college age who cannot or will not fit into the usual regimen of campus learning. To ensure this opportunity, the Presidential Decree on Open Colleges (1982) stipulates that an open college shall utilize broadcasting, correspondence, an industrial and research organization, and other communication media and facilities for its instruction. However, no instructional method has of yet been developed other than face-to-face instruction on campus and practical training at related industries. The principal method of instruction of face-to-face teaching on campus is characterized by lectures and laboratory work. While practical training is utilized in a few courses, only two credits are possible to earn through it (Ministry of Education, 1985b).

To resolve this problem and to help students better integrate learning with the world of work, the Ministry of Education strongly urges the colleges to develop at least one method of open learning and

share it among other colleges. Up to now, however, there have been no noticeable developments. The previous efforts of the colleges have been limited and isolated from each other. Furthermore, the present efforts of the colleges are directed mostly toward developing relevant texts for self-study only. These efforts continue to be initiated regardless of the interests or needs of students and faculty. In other words, unless such development efforts are based on the actual interests and needs of students and faculty members, this approach will not become a viable strategy for the development of Korea's open colleges.

Issues and Problems to be Solved

This review of the practice of Korea's open colleges points to a number of issues and problems which need to be resolved before further development is possible.

1. Exemption of formal educational qualifications for entry. The colleges are open only to those who have a high school diploma or its equivalent. Those who have the ability and willingness to pursue higher education but do not have those formal educational qualifications cannot be served by the colleges at this time. This situation is made even more deplorable by the fact that there is currently no way of pursuing any higher education in Korea without a high school diploma. A more open requirement for entering an open college would be necessary if the country wants more people, especially from disadvantaged groups, to gain access to higher education. The fact that 40 percent of the unqualified group among the 1971 entrants of the Open University in the United

Kingdom have obtained a B.A. degree is quite encouraging in this contrasting respect.

2. Decentralization of decision making. As noted in the preceding section, the basic policies for open colleges, including those of admission, graduation, and establishment of a course, are determined by the Ministry of Education. This condition makes it difficult for an open college to serve its community according to the needs of its regional context. In addition, there are at present too few opportunities for translating community needs for education into college curriculum offerings. Though a college-industry cooperation committee exists in each major field, the input of these committees is limited and not directly related to meeting community needs, owing to the stipulation that the local college is not free to offer a course without Ministry permission.

3. Finance and cost. There seems to be a problem of finance and student cost at the open colleges. The colleges raise about 80 to 90 percent of their funding from student tuitions and fees. There is virtually no support from the Government for the private colleges. Even for the national colleges, Government support amounts to a very small proportion of their funding, a sharp contrast with the fact the Government gives KACC about 80 percent of its funding. As a result, student tuition and other open college fees amount to three fourths those of conventional colleges and seven times those of KACC. The problem becomes even worse by virtue of the limited number of students which any open college can admit owing to the college's great dependence

on traditional classroom teaching. Unless the colleges find other sources of funding, they will not be able to attract many of the disadvantaged students they are established to serve.

4. Provision of short vocational courses. There is growing consensus among adult educators that adult interest in discipline-based curricula is lessening in favor of stronger interest in professional and vocational training (Zigerell, 1984). The fact the British Open University, which has been concerned primarily with degree-oriented and general curricula, announced its intention to concentrate more on short vocational courses might be seen as illustrative of this trend. Yet Korean open colleges offer only degree courses. No college has of yet offered short training courses, although they are supposed to provide special training courses for employees commissioned by industry. Up to now, no plans have been developed by any college to offer even one course for the people of the community. This problem poses a big challenge to the colleges to provide the lifelong education as they are intended.

5. Development of instructional methods and media. As of this time there has been no significant development of innovative instructional methods and media in Korean open colleges. They still largely rely on campus-based face-to-face teaching methods to deliver all their courses. Consequently, students have to come to school to receive their education, a problem for those who work. This poses a serious question for the future of those colleges established to provide higher educational opportunities for working people, most of whom find

the current time and place of study as major obstacles to continuing their education. In other words, Korea's open colleges cannot accomplish their intended purpose without developing more varied instructional methods and media, which reduce long-standing barriers working people have to continue their education and enable them to study in their own way, at their own pace, where and when they desire.

Summary

This chapter examined the historical development of education in Korea, and the rationales for, and the current practice of, the nation's open colleges. Several issues and problems to be addressed were also identified before further development of the colleges is possible. Among the issues and problems, the study focuses particularly on the development of instructional methods and media, which, the researcher believes, is of vital importance to the future of Korea's open college system.

The next chapter examines the problems and constraints of the colleges' current instructional system as they are perceived by students. Chapter VII assesses open college staff needs for resources to develop appropriate instructional methods and media. The final Chapter weaves the main themes and conclusions of the study together, and suggests recommendations useful for the further development of the colleges.

Footnote

[1]Junior colleges were created in 1948 to offer basic higher education to those unable to complete the full 4-year cycle of higher education. Since that time, the junior colleges have encountered many problems. Their programs have become more oriented toward occupational preparation, with the results that they offer a catchall curriculum, which is a diffuse goal not clearly directed at defined social needs. In addition, there have been increasing difficulties in securing employment for junior college graduates competing with those from 4-year colleges and universities. These colleges require as strict formal entry requirements as 4-year colleges and universities, offer no part-time study or evening classes, and charge almost as much tuitions as 4-year colleges and universities. The inability of these colleges to offer a viable alternative to 4-year programs of study has contributed to the need for open colleges.

C H A P T E R VI

A SURVEY OF THE STUDENTS: PROBLEMS AND CONSTRAINTS OF THE INSTRUCTIONAL SYSTEM

Introduction

Adult learners are different from children in many respects. Among others, most of them have developed their own strategies for self-directed learning through their long experience of studying. The underlying assumption in andragogy, the art and science of helping adults learn, is that the adult learner has a deep psychological need not only to be self-directing but also to be perceived by others as being self-directed (Knowles, 1970). Knowles believes that the greatest learning takes places when teaching methods and techniques involve the learner most deeply in self-directed learning. In this sense, in developing appropriate instructional methods and media, Korea's open colleges should know and consider the problems and constraints their students perceive with the current instructional system. It is the purpose of this chapter to examine those problems and constraints from the viewpoint of students. A questionnaire was designed to carry out this examination.

Methodology

Development and Design of the Questionnaire

The essential component of the survey was a questionnaire systematically developed by the researcher. Two instruments were

employed in the pilot study to develop the multiple choice items of the questionnaire, and to investigate whether the sample of subjects had sufficient knowledge and understanding to express a meaningful opinion about a particular topic. One of the instruments was an open questionnaire which was administered to one hundred and twenty students of the Korea's six open colleges. The other instrument was a semi-structured group interview, which was administered to three groups of five to seven open college students. Their responses have been used in constructing the multiple choice items of the final closed questionnaire. Efforts were made to use the students' own language in preparing those items in order to make the questionnaire content more salient to the respondents.

Each questionnaire was composed of three categories of questions: questions which asked the respondent to provide basic information regarding their personal and programmatic background; those which asked the respondents to give their opinions on their personal experience in an open college; and those which asked them to give opinions about a particular topic. Anonymity was considered to be an important condition to be met to insure the information provided was reliable.

Survey Procedures

The questionnaires were sent to the Director of Academic Affairs of the six open colleges, for later mailing to fifty randomly selected students at each college. Each questionnaire, with introductory cover letter and return envelope, was enclosed in another envelop and sealed

prior to distribution to the directors in order to facilitate the mailing process.

The purpose of the survey was explained briefly in the cover letter in such a way as to help the respondent feel that the survey was important and their response significant to the development of open colleges in Korea. This was done to obtain a satisfactory percentage of responses.

Two weeks after the initial distribution of the questionnaire to the respondent, another copy of the questionnaire with another return envelop was sent to those who had not responded. This follow-up seemed to have greatly enhanced the response rate. The salience of the questionnaire content to the respondent, obtained through the pilot study using the students' own language in the questionnaire items, also seemed to have had a positive effect on the response rate.

Analysis of the Data

This section presents findings and interpretations of the data collected from the questionnaire. Frequency distributions and percentages are used to show the most frequently occurring categories on a particular topic. Chi-square (χ^2), the best known nonparametric test of significance, is employed to investigate whether there is any statistically significant difference in the responses of the students with respect to: funding (national versus private); sex (male versus female); marriage (married versus unmarried); employment (employed versus unemployed); or the kind of job (office work versus non-office

work). The null hypothesis to be tested is that there is no significant difference among these different student groupings.

Summary of Questionnaires

As indicated in Table 4, more than 96 percent of the potential respondents returned the questionnaire, of which more than 94 percent were found usable.

Table 4

Summary of Questionnaires

Institution	Number distributed	Number returned	Percent
Kyunggi	50	50	100.0
Pusan	50	49	98.0
Daejeon	50	46	92.0
Kwangju	50	47	94.0
Kyungbuk	50	44	88.0
Kunsan	50	48	96.0
Subtotal	300	284	94.7
Unusable/incorrectly completed		6	2.0
Total		290	96.7

A recent questionnaire-based survey of the professors and students in junior and four-year colleges in Korea produced a return rate of 80.8

percent (Yoon et al., 1981). The return rate of the junior college students in that survey was 86.1 percent. The response rate of this survey was considerably higher. It was understood that mailing the follow-up materials to individuals who had not responded within two weeks after the initial distribution of the questionnaire and the salience of the questionnaire content to the respondents greatly enhanced the response rate. A review of 98 experimental studies regarding response rates for initial mailing and follow-ups showed that the response rate can be enhanced up to 19.9 percent with follow-ups (Borg & Gall, 1983).

Media Access and Use for Study

Various instructional methods and media can be employed by an open learning institution. Among them radio and television are the ones most commonly used by many distance and open learning institutions. Audio and video cassettes, and computer technology are also being employed by increasing numbers of institutions in recent years. Considering this trend, it might be useful to assess the current practice of students in using such media for their study, although open colleges in Korea have not developed any instructional methods using such media so far.

It was found from the survey that radio, television, and audio cassette players are widespread in Korean society. More than 85 percent of the respondents had or had easy access to all three of them, and more than 90 percent had or had easy access to television or audio cassette players (see Table 5). Not many students had ready access to a video cassette player, personal computer, or computer terminal. But there was

an indication that these technologies were beginning to spread among Korean people.

Table 5

Media Access and Use for Study

Media	Access		Use	
	Frequency	Percent (n=284)	Frequency	Percent (n=281)
Radio	254	89.4	81	28.8
Television	262	92.3	97	34.5
Audio cassette player	268	94.4	243	86.5
Video cassette player	53	18.7	16	5.7
Personal computer	18	6.3	17	6.0
Computer terminal	3	1.1	4	1.4
None	1	0.4	28	10.0

The overall result is very encouraging for Korean open colleges if they are planning to introduce radio, television, or audio cassette players into their instructional systems. Even more encouraging is the fact that 86.5 percent of the respondents have already used an audio cassette player for their own study, and that 28.8 and 34.5 percent of them respectively have used radio or television even though currently there is no radio or television broadcast for them. However, as can be seen later in Table 13, only 21 out of 164 students wanted their college to develop correspondence education with radio or television broadcasts,

or with audio or video cassettes. The introduction of these media into the instructional system of an open college in Korea, therefore, seems to require further study and careful consideration.

Reasons for Going on to College

Adults participate in educational activities for various reasons. One reason might involve getting a new job or advancement in one's current job, another meeting people, obtaining knowledge or skills, or pursuing self-fulfillment.

The reasons given by the students of Korean open colleges why they went on to college are summarized in Table 6.

Table 6

Reasons for Going on to College

Reason	Student response	
	Frequency	Percent
a. To acquire new knowledge	44	17.9
b. To acquire job-related skills	26	10.6
c. To get a degree	43	17.5
d. To get a (new) job	33	13.4
e. For self-development	98	39.8
f. Other	2	0.8
Total	246	100.0

More than a third of the respondents answered that they went on to college for self-development. The result seems to reflect the long tradition of high respect for educated literati in Korean society. Since most students have been employed, what they wanted might be a college education for their own self-development, which can easily be related to self or social esteem.

This preliminary conclusion was supported by further analysis of the data. Chi square(χ^2) test was done to investigate whether there is any significant difference between different groups due to funding, sex, marriage, employment, or the type of job. Applied to the data in Table 7, it was found that there were significant differences between groups by sex, marital status, and occupational status.

Table 7

Comparisons of the Reason for Going on to College: Male and Female, Married and Unmarried, and Employed and Unemployed

Reason	Sex		Marriage		Employment	
	Male	Female	Married	Unmarried	Employed	Unemployed
a.	38(19.5)	6(12.8)	12(18.2)	31(17.7)	20(14.0)	23(25.0)
b.	22(11.3)	4(8.5)	7(10.6)	19(10.9)	17(11.9)	9(9.8)
c.	39(20.0)	4(8.5)	22(33.3)	21(12.0)	31(21.7)	11(12.0)
d.	33(16.9)	0	3(4.5)	30(17.1)	12(8.4)	20(21.7)
e.	63(32.3)	33(70.2)	22(33.3)	74(42.3)	63(44.1)	29(31.5)
Total	195(100.0)	47(100.0)	66(99.9)	175(100.0)	143(100.1)	92(100.0)
χ^2	25.70 (p<.01)		18.75 (p<.01)		16.47 (p<.01)	

Note. Figures in parentheses are percentages.

In other words, a higher proportion of female students whose social status is regarded lower in general than that of the male in Korean society; a higher proportion of unmarried students who may need a college education more than married students for their future social life; and a higher proportion of the employed for similar reasons, noted before, indicated self-development as the reason for going on to college.

Reasons for Attending an Open College

The primary purpose of Korean open colleges is to provide higher educational opportunities for working people. It has been noted in chapter V that the colleges have been quite successful in this point. In an attempt to appraise this conclusion, students were asked to indicate the reason they attend an open college instead of a traditional college. The results are presented in Table 8.

Table 8

Reasons for Attending an Open College

Reason	Student response	
	Frequency	Percent
a. Being able to study while working	150	56.6
b. Easy admission or transfer	61	23.0
c. Inexpensive tuition	16	6.0
d. Lack of preparation to attend a traditional college	17	6.4
e. Too old to attend a traditional college	16	6.0
f. Other	5	1.9
Total	265	99.9

More than half of the respondents indicated they attend an open college because they are able to study while still working. This supports the fact that the open colleges have been successful in

providing higher education opportunities to the working people. Easy admission or transfer was indicated by 23 percent of the students as their reason for attendance.

The chi square test showed that there is significant difference in the response between groups due to funding, marriage, and employment (see Table 9).

Table 9

Comparisons of the Reason for Attending an Open College: National and Private, Married and Unmarried, and Employed and Unemployed

Reason	Funding		Marriage		Employment	
	National	Private	Married	Unmarried	Employed	Unemployed
a.	79(59.0)	71(56.3)	50(65.8)	98(54.4)	108(68.8)	36(37.9)
b.	26(19.4)	35(27.8)	11(14.5)	48(26.6)	26(16.6)	34(35.8)
c.	15(11.2)	1(0.8)	1(1.3)	15(8.3)	4(2.5)	11(11.6)
d.	7(5.2)	10(7.9)	5(6.6)	12(6.7)	7(4.5)	10(10.5)
e.	7(5.2)	9(7.1)	9(11.8)	7(3.9)	12(7.6)	4(4.2)
Total	134(100.0)	126(99.9)	76(100.0)	180(99.9)	157(100.0)	95(100.0)
X^2	14.55 (p<.01)		14.26 (p<.01)		31.52 (p<.01)	

Note. National college: Kyunggi, Pusan, and Daejeon.
Private college: Kwangju, Kyungbuk, and Kunsan.
Figures in parentheses are percentages.

While most respondents in every group indicated being able to study while working as their reason for attending an open college, a significantly lower proportion of unemployed students indicated that as their reason. A similar proportion of them indicated easy admission or transfer as their reason. Inexpensive tuition was indicated as their reason by a greater proportion of national college, unmarried, and unemployed students than that of private college, married, or employed students. This might be interpreted as follows: the relatively inexpensive tuition of a private open college, as compared to that of a private four-year college, cannot be very attractive to students because it is almost twice as expensive as that of a national open college and even more expensive than that of a national four-college; and the unemployed students found the tuition expensive because they cannot earn their tuition and are usually supported by their parents, and more than half of the unmarried students were unemployed.

Open College Education Viewed by Students

The education offered by Korean open colleges is supposed to be oriented towards more vocational training based on the needs and demands of the nation's growing industries. In order to assess student views of the open college education they were receiving, three different but related questions were incorporated into the survey instrument. Table 10 presents the results.

Table 10

Student View of Open College Education

Issue	Student response	
	Frequency	Percent
Satisfaction with the education		
a. Very satisfied	35	12.4
b. Satisfied	42	14.9
c. Both satisfied and dissatisfied	55	19.5
d. Dissatisfied	77	27.3
e. Very dissatisfied	73	25.9
Total	282	99.9
Reason for dissatisfaction		
a. Too much classroom teaching	34	17.8
b. Low quality of instructors	33	17.3
c. Lack of practical knowledge or skills in the curriculum	99	51.8
d. Low level of education	16	8.4
e. Other	9	4.7
Total	191	100.0
Desired education		
a. Improved level of education	65	24.0
b. More general education	68	25.1
c. More vocational education	102	37.6
d. More education for further study	36	13.3
e. Other	0	0
Total	271	100.0

More than half of the respondents felt that the education they were receiving at an open college was unsatisfactory. Almost 26 percent of them indicated that they were very dissatisfied with the education.

The most frequently indicated reason for the dissatisfaction was lack of practical knowledge or skills in the curriculum. Consequently, the most desired education was more vocational education. Nearly 40 percent of the respondents wanted to receive more vocational education at an open college. About 25 percent of the respondents wanted more general education, while another 25 percent improved level of education, and 13.3 percent more education for further study. The results indicate that the education offered by Korea's open colleges was not practical enough for students to apply what they learned at school at work. In fact, many instructors still depend on theory-oriented lectures which they had been accustomed to giving for many years. However, it should also be noted that more than 60 percent of the students wanted some form of education other than vocational education. This also corresponds to the fact that nearly 40 percent of them indicated self-development as their reason for going on to college (see Table 6).

There was a significant difference of the reason for the dissatisfaction at the .01 level between national collegians and private college students (see Table 11).

Table 11

Comparison of the Reason for Dissatisfaction: National and Private

Reason	National		Private	
	Frequency	Percent	Frequency	Percent
a	29	31.5	5	5.6
b.	11	12.0	22	24.4
c.	42	45.7	57	63.3
d.	10	10.9	6	6.7
Total	92	100.1	90	100.0
χ^2	23.86 ($p<.01$)			

Almost six times as many national college students as private college students indicated too much classroom teaching as the reason, while more than twice as many private college students as national college students indicated low quality of instructors as the reason for their dissatisfaction.

Table 12 shows the difference of desired education between office work and non-office work students.

Table 12

Comparison of Desired Education: Office Work and Non-office Work

Desired education	Office work		Non-office work	
	Frequency	Percent	Frequency	Percent
a.	30	33.3	8	11.4
b.	28	31.1	19	27.1
c.	24	26.7	33	47.1
d.	8	8.9	10	14.3
Total	90	100.0	70	99.9
X^2	13.82 ($p<.01$)			

The difference was that almost half of the non-office work students wanted more vocational education, while office work students wanted improved levels of education, more general education, or more vocational education almost evenly. The difference was found significant at the .01 level.

The Instructional System

The open colleges are supposed to develop varied instructional methods and media to enable students to study without being restricted by place and time of study. As noted earlier, however, there has not been much development in this area up to today. Instruction is still carried out through classroom lectures in most cases, and students must be present at class in order to receive an education. What, then, do

the students think about this situation? Are they satisfied with the instructional methods of their college? If not, what kind of instructional methods do they want their college to develop? Do they think the instructional system of their college is suitable for the working people to continue education? If not suitable, what can make it more suitable for them? All these questions were included in the questionnaire in order to assess the student view of the instructional system of Korean open colleges. Table 13 presents the results of those questions.

Table 13

Student View of the Instructional System

Issue	Student response	
	Frequency	Percent
Satisfaction with the instructional method		
a. Very satisfied	39	14.1
b. Satisfied	47	17.0
c. Both satisfied and dissatisfied	49	17.7
d. Dissatisfied	78	28.2
e. Very dissatisfied	64	23.1
Total	277	100.1
Desired instructional method		
a. Cooperative education	101	61.6
b. Correspondence education	10	6.1
c. Correspondence education with radio or television broadcast	6	3.7
d. Correspondence education with audio or video cassette	15	9.1
e. Computerized education	24	14.6
f. Other	8	4.9
Total	164	100.0

(table continues)

Issue	Student response	
	Frequency	Percent
Suitability of the instructional system for the working people		
a. Very suitable	62	22.5
b. Suitable	90	32.7
c. In between	39	14.2
d. Not suitable	47	17.1
e. Not at all suitable	37	13.5
Total	275	100.0
Measure for increasing the suitability		
a. Introduction of more open learning methods	82	47.7
b. Giving credits to prior experience	39	22.7
c. Introduction of cooperative education	33	19.2
d. More weekend classes	15	8.7
e. Other	3	1.7
Total	172	100.0

More than half of the respondents felt they were dissatisfied with the instructional methods of their college, of whom 23.1 percent felt very dissatisfied, while 31.1 percent felt satisfied. In contrast, the proportion of students who indicated that the instructional system of their college was suitable for working people to continue education was surprisingly high. More than 55 percent indicated that the

instructional system was suitable for working people. And there was no significant difference between different groups. Seemingly, the students were acknowledging the fact that open colleges offer courses in the evening so that working people can continue their education while still working.

The instructional method most students wanted their college to develop was cooperative education. This result corresponded to the result that many students wanted to receive more vocational education (see Table 10). However, the introduction of cooperative education was considered by only 19.2 percent of the students as being capable of making the instructional system more suitable for working people. Almost half of the respondents indicated that the introduction of more open learning methods as a correct measure for increasing the suitability of the instructional system. But only 18.9 percent of them wanted their college to develop correspondence education of any kind.

A greater proportion of non-office work students than office work students indicated the introduction of cooperative education as being able to make the instructional system more suitable for the working people (see Table 14). The difference was significant at the .05 level.

Table 14

Comparison of the Measure for Increasing the Suitability: Office Work and Non-office Work

Measure	Office work		Non-office work	
	Frequency	Percent	Frequency	Percent
a.	28	53.8	16	34.0
b.	14	26.9	12	25.5
c.	5	9.6	17	36.2
d.	5	9.6	2	4.3
Total	52	99.9	47	100.0
X^2	11.03 ($p<.05$)			

Difficulties Students Perceive in Continuing Their Education

Nontraditional students have many barriers to continuing their education, some derived mainly from previous educational failure, absence from education for years, shortage of time to study, distance to an educational institution, or poverty. The students of Korea's open colleges may have similar difficulties. A number of questions were asked of students to address these difficulties and to suggest possible solutions. Table 15 presents the results of this information.

Table 15

Student View of Difficulty in Continuing Education at an Open College

Issue	Student response	
	Frequency	Percent
Degree of difficulty		
a. Very difficult	40	14.7
b. Difficult	36	13.2
c. In between	34	12.5
d. Not difficult	106	38.8
e. Not at all difficult	57	20.9
Total	273	100.1
Reason for difficulty		
a. Attendance to classroom teaching	31	22.6
b. Shortage of time to study	50	36.5
c. Economic difficulty	30	21.9
d. Lack of basic knowledge	22	16.1
e. Other	4	2.9
Total	137	100.0
Possible solution		
a. Introduction of more open learning methods	60	33.3
b. More help/cooperation from work place	36	20.0
c. Financial aids	51	28.3
d. Free tuition	16	8.9
e. Provision of convenient transportation	17	9.4
f. Other	0	
Total	180	99.9

There was close agreement between these data and the information summarized in Table 13. For example, 27.9 percent of the respondents indicated that it was difficult for them to continue education at an open college while 30.6 percent indicated the instructional system of their college was not suitable for working people to continue their education at an open college. In addition 59.7 percent of the students indicated that it was not difficult, while 55.2 percent indicated the instructional system was suitable for working people to continue their education. While no attempt was made to compare each individual response to verify the relationship of the responses, the proportions appeared very similar.

As the reason for the difficulty, 36.5 percent of the respondents indicated shortage of time to study. Since most students were employed, this result was understandable. The remaining respondents indicated almost evenly attendance to classroom teaching, economic difficulty, or lack of basic knowledge as the reason for the difficulty.

To resolve the difficulty in continuing education at an open college, 33.3 percent of the respondents indicated that more open learning methods should be introduced, and 28.3 percent indicated there should be more financial aids. The latter would have been a possible solution of the first priority if coupled with free tuition, which was indicated by only 8.9 percent of the students probably because of its perceived unrealizability. More help/cooperation from the work place was indicated by 20 percent of the respondents as a possible solution.

There was a significant difference in degree of difficulty between national and private college students (see Table 16).

Table 16

Comparison of the Degree of Difficulty: National and Private

Degree of difficulty	National		Private	
	Frequency	Percent	Frequency	Percent
a.	17	12.3	23	17.0
b.	12	8.7	24	17.8
c.	13	9.4	21	15.6
d.	65	47.1	41	30.4
e.	31	22.5	26	19.3
Total	138	100.0	135	101.1
X^2		12.62 ($p<.05$)		

A higher proportion of private college students found it difficult to continue education at an open college, while conversely a higher proportion of national college students indicated it was not difficult. The difference was found to be significant at the .05 level by the chi square test.

As for the reason of the difficulty in continuing education at an open college, significant differences were found between different groups due to funding and employment (see Table 17).

Table 17

Comparisons of the Reason for Difficulty: National and Private, and Employed and Unemployed

Reason for difficulty	Funding		Employment	
	National	Private	Employed	Unemployed
a.	25(39.1)	6(8.7)	19(23.5)	11(23.4)
b.	21(32.8)	29(42.0)	40(49.4)	8(17.0)
c.	9(14.1)	21(30.4)	9(11.1)	19(40.4)
d.	9(14.1)	13(18.8)	13(16.0)	9(19.1)
Total	64(100.1)	69(99.9)	81(100.0)	47(99.9)
X^2	18.29 (p<.01)		20.16 (p<.01)	

Note. Figures in parentheses are percentages.

Private college students attributed this difficulty more to shortage of time to study or to economic difficulty, while national college students indicated attendance at classroom teaching or shortage of time to study as the reason for the difficulty to continue education at an open college. For the employed students, shortage of time to study was the main reason for the difficulty, while economic difficulty was the main reason for the unemployed students. The difference was significant at the .01 level.

There was also significant difference in the possible solution of the difficulty between different groups due to funding, marriage, and employment. The results of the chi square tests are presented in Table 18.

Table 18

Comparisons of the Possible Solution: National and Private, Married and Unmarried, and Employed and Unemployed

Possible solution	Funding		Marriage		Employment	
	National	Private	Married	Unmarried	Employed	Unemployed
a.	28(30.8)	32(36.0)	27(50.0)	33(27.0)	44(42.7)	15(21.7)
b.	24(26.4)	12(13.5)	16(29.6)	19(15.6)	33(32.0)	2(2.9)
c.	19(20.9)	32(36.0)	9(16.7)	41(33.6)	18(17.5)	30(43.5)
d.	11(12.1)	5(5.6)	1(1.9)	15(12.3)	2(1.9)	12(17.4)
e.	9(9.9)	8(9.0)	1(1.9)	14(11.5)	6(5.8)	10(14.5)
Total	91(100.1)	89(100.1)	54(100.1)	122(100.0)	103(99.9)	69(100.0)
X^2	9.87 (p<.05)		21.84 (p<.01)		48.01 (p<.01)	

Note. Figures in parentheses are percentages.

While the introduction of more open learning methods was indicated by respondents of almost all groups, private college students, unmarried students, and unemployed students favored financial aids as the solution. These results reflect the fact that, as noted in the discussion of Table 9, the relatively inexpensive tuition of an open college, compared to that of a traditional four-year college, was not an attracting factor to private college, unmarried, and unemployed students. They indicated that there should be some financial help to pay their tuition. In contrast, a higher proportion of national college, married, and employed students indicated the introduction of

more open learning methods or more help/cooperation from the working place as the solution for the difficulty of continuing education at an open college.

Before the survey, it was supposed that many students would feel it burdensome to attend classes, since most of them were considered to be employed full-time. Surprisingly, almost seven out of ten responded that it was not burdensome for them to go to school to attend classes, even though almost all of them went to school at least four times a week. Table 19 presents the information.

Table 19

Student View of Burden in Attending Classes

Issue	Student response	
	Frequency	Percent
Degree of burden		
a. Very burdensome	32	11.4
b. Burdensome	44	15.7
c. In between	12	4.3
d. Not burdensome	122	43.6
e. Not at all burdensome	70	25.0
Total	280	100.0
Measure for reducing the burden		
a. Introduction of more open learning methods	92	48.9
b. More help/cooperation from work place	33	17.6
c. Provision of convenient transportation	43	22.9
d. More weekend classes	14	7.4
e. Other	6	3.2
Total	188	100.0

There was some agreement between these data and those summarized in Table 15. For example, 27.1 percent of the respondents indicated that it was burdensome to attend classes, while 27.9 percent of them indicated that it was difficult to continue their education at an open

college. In addition, 68.6 percent of the students indicated it was not burdensome, while 59.7 percent said it was not difficult. There was also some similarity between these results and those of Table 13 in that 68.6 percent of the students indicated it was not burdensome, while 55.2 percent indicated the instructional system of their college was suitable for working people to continue their education, and that 27.1 percent of the respondents felt it was burdensome, while 28.6 percent of them found the instructional system not suitable for working people to continue their education.

In order to make it less burdensome for students to attend classes, almost half of the respondents wanted the introduction of more open learning methods other than classroom teaching. Provision of convenient transportation was indicated by 22.9 percent of the students, and 17.6 percent of them wanted to get more help/cooperation from their work place to attend classes.

More male, married, or employed students felt it burdensome than female, unmarried, or unemployed students. The results of the chi square tests to examine the difference between those groups are presented in Table 20.

Table 20

Comparisons of the Degree of Burden: Male and Female, Married and Unmarried, and Employed and Unemployed

Degree of burden	Sex		Marriage		Employment	
	Male	Female	Married	Unmarried	Employed	Unemployed
a.	32(14.1)	0	17(21.0)	15(7.7)	24(14.5)	8(7.8)
b.	37(16.3)	7(13.7)	18(22.2)	25(12.8)	39(23.5)	4(3.9)
c.	8(3.5)	4(7.8)	2(2.5)	9(4.6)	7(4.2)	5(4.9)
d.	102(44.9)	19(37.3)	30(37.0)	91(46.4)	56(33.7)	57(55.9)
e.	48(21.1)	21(41.2)	14(17.3)	56(28.6)	40(24.1)	28(27.5)
Total	227(99.9)	51(100.0)	81(100.0)	196(100.1)	166(100.0)	102(100.0)
X^2	16.46 (p<.01)		16.83 (p<.01)		25.10 (p.01)	

Note. Figures in parentheses are percentages.

More than 40 percent of the married students and 38 percent of the employed students indicated it burdensome to attend classes, while 20.5 percent of the unmarried and 11.7 percent of the unemployed students indicated it burdensome. The differences were found significant at the .01 level.

Yet, as to the possible solution to reduce the burden, significant difference was found only between groups of employed and unemployed students. As can be seen in Table 21, almost half of the students of each group indicated the introduction of more open learning methods can

reduce the burden, a higher proportion of the employed students wanted to get more help/cooperation from the working place, while a higher proportion of unemployed students indicated provision of convenient transportation as a possible solution.

Table 21

Comparison of the Measure for Reducing the Burden: Employed and Unemployed

Measure for reducing the burden	Employed		Unemployed	
	Frequency	Percent	Frequency	Percent
a.	54	48.2	34	54.8
b.	30	26.8	3	4.8
c.	19	17.0	20	32.3
d.	9	8.0	5	8.1
Total	112	100.0	62	100.0
X^2		14.65 ($p<.01$)		

Conclusion

The findings emerging from the data presented in the preceding pages can be summarized as follows:

- Most students had easy access to radio, television, and audio cassette players, and most have used audio cassette players for their study. They did not have easy access to a video cassette player and

computer technology, but there was an indication that these technologies were beginning to spread among them.

- The largest number of the respondents indicated that they went on to college for self-development. To acquire new knowledge and to get a degree were the next most important reasons cited. A higher proportion of female, unmarried, and employed students than male, married, and unemployed students indicated self-development for their reason for going on to college.

- The primary reason for attending an open college instead of a traditional college was being able to study while working. Easy admission or transfer was the next primary reason for attending an open college.

- More than half of the students were found to be dissatisfied with the education of their college. The primary reason for their dissatisfaction was lack of practical knowledge or skills in the curriculum. Consequently, the largest number of the students wanted to receive more vocational education from their college.

- More than half of the respondents indicated they were dissatisfied with the instructional methods of their college, while a similar number indicated that the instructional system of their college was suitable for working people to continue their education. Most students wanted cooperative education to be developed by their college, while almost half indicated the introduction of more open learning methods could make the instructional system more suitable for working people to continue their education at an open college.

- Most students did not think it difficult to continue education at an open college, nor feel it burdensome to go to school to attend classes.

One conclusion which may be drawn from the survey is that many students want their college to develop those instructional methods that can enhance the practicality of the education they receive. It is apparent from the results of the survey that students, most of whom are employed full-time, were satisfied with the fact they were able to continue their education at an open college without losing their jobs and without much difficulty. This implies that the open college has been successfully implemented in Korea as an important provider of continuing higher education for working people. However, most students were not satisfied with the education and the instructional methods of their college. The curriculum was indicated to lack practical knowledge or skills, and most students wanted their college to develop appropriate instructional methods such as cooperative education which may enhance the practicality of the education.

Another conclusion which may be drawn from the survey is that many students wanted their college to introduce additional open learning methods other than classroom teaching. While most students indicated that it was not burdensome to go to school to attend class, a large number of them indicated the introduction of more open learning methods could make it less burdensome and make the instructional system of their college more suitable for working people to continue education. However, it should be noted that not many students preferred

correspondence education to be developed by their college. They preferred cooperative education and computerized education more than correspondence education. In fact, many students, especially those who were unemployed, indicated in the space provided for further comments that an open college should be differentiated from the Korea Air and Correspondence College, which employs correspondence education as its major instructional method.

With these conclusions in mind, the next chapter will assess the needs for resources which the staff of Korea's open colleges need for the development of instructional methods and media appropriate for their students.

C H A P T E R VII

THE NEEDS OF KOREAN OPEN COLLEGE STAFFS FOR DEVELOPING APPROPRIATE INSTRUCTIONAL METHODS AND MEDIA

Introduction

As noted earlier, there has not been much development of instructional methods and media by Korea's open colleges. The colleges still depend heavily on face-to-face teaching on campus. Although some efforts on the part of Ministry of Education to encourage colleges to develop more open learning methods have been made, not much achievement has been reported yet.

This chapter assesses the needs for various resources expressed by Korea's open college staffs to develop varied instructional methods and media appropriate for their students. The purpose of this assessment is to provide the open college staffs and the planners in the Ministry of Education with useful information regarding the needs of the open college staffs for developing instructional methods and media, and thus to facilitate the development process. The results of the assessment suggest some policy considerations for the Ministry of Education. Since the staffs play an essential role in the instructional process, and no instructional methods or media are likely to be developed and employed effectively without their understanding, this needs assessment is important for the development of those instructional methods and media.

Needs Analysis Methodology

The methodology used for the assessment is a short form of the Coffing/Hutchinson Needs Analysis Methodology (NAM), drafted by S. B. Maxner in 1977 (see Appendix D). NAM was originally developed in 1973 by Thomas E. Hutchinson of the University of Massachusetts, Amherst, and Richard T. Coffing of the Ohio State University. The reason for employing NAM for assessing the needs of the staff of Korean open colleges is that it is one of the most explicit and useful tools for assessing need components in a participatory manner. The researcher learned its strengths and usefulness through his implementation of NAM at the University Without Walls (UWW), University of Massachusetts, as part of a cost-effectiveness study of UWW. The purpose of NAM is to provide useful information about needs for information users or decision makers to help make decisions (Coffing & Hutchinson, 1974). To accomplish the purpose, NAM is composed of a standard, systematic, and operational set of rules and procedures, and provides a precise plan for action.

While NAM is similar to other methods of needs assessment in that it may use a questionnaire or an interview technique to determine needs and to measure need fulfillment, and in that it allows for sampling and other survey procedures, it is distinguished from others in the following aspects:

- its broad applicability to many kinds of needs assessment;
- its complexity of process responsive to a broad range of options;

- its well-defined and stipulated assumptions, which offer an explicit direction to be undertaken for each step;
- its demand to operationalize definitions of needs as specifically as possible in order to make the information produced more useable by information users;
- its formalized process for measuring the extent to which identified needs are met or unmet; and
- its process for evaluating and revising the Methodology itself.

NAM has five sub-purposes which outline the basic elements of the Methodology, which can be accomplished through the implementation of ten sub-sets of procedures within NAM. The five sub-purposes and their relation to the ten sets of procedures are as follows:

- To manage the process, which is implemented in the following four sets of procedures:
  - 1.0 Preparation
  - 3.0 Planning
  - 9.0 Evaluation of Needs Analysis
  - 10.0 Revising
- To specify the basic scope and priorities, which is accomplished with the following set of procedures:
  - 2.0 Contract Negotiation
- To identify the information users' concerns, which is accomplished in:
  - 4.0 Determination of Who-What-Whom concerns

- To obtain and report definitions of needs, which is accomplished with the following sets of procedures:

  5.0 Defining

  6.0 Definition Reporting

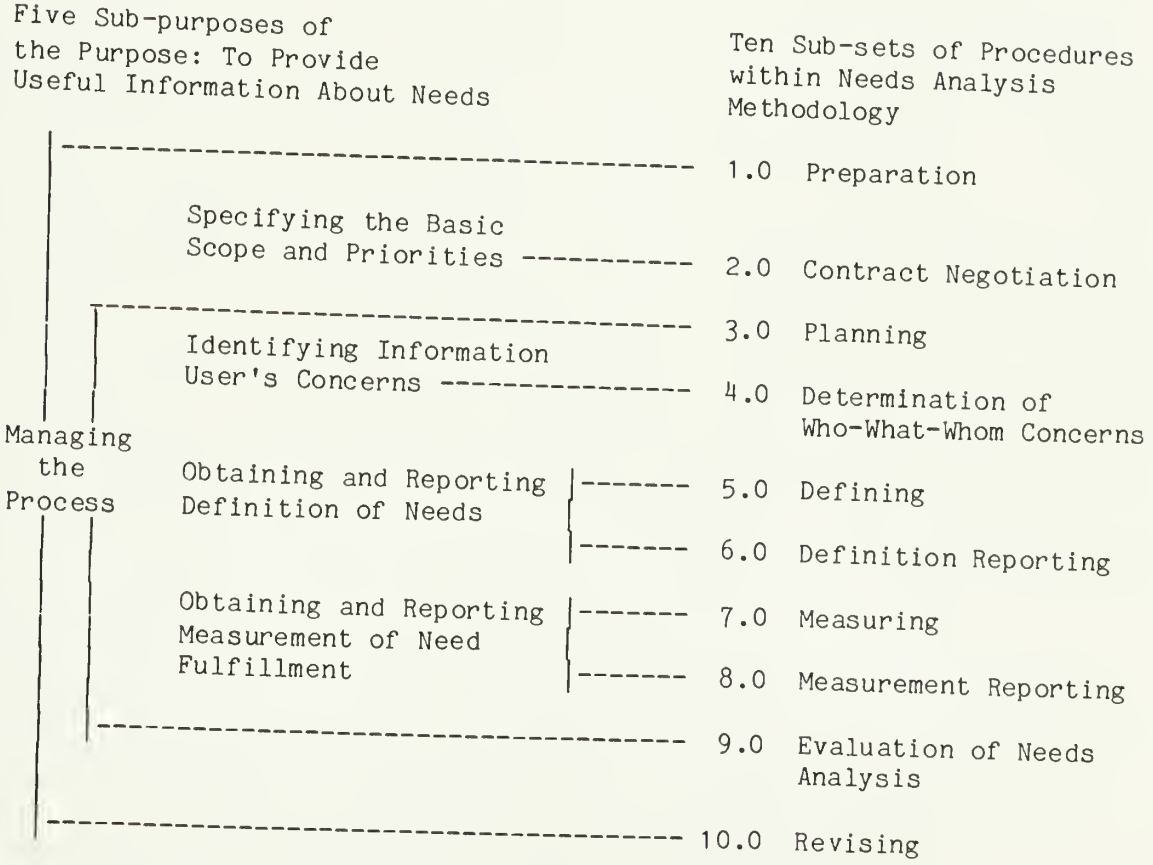
- To obtain and report measurements of need fulfillment, which is accomplished through the implementation of the following sets of procedures:

  7.0 Measuring

  8.0 Measurement Reporting (Coffing & Hutchinson, 1974).

The relationship between five sub-purposes and ten sub-sets of procedures is illustrated in Figure 2.

Figure 2. Sets of purposes and procedures within Needs Analysis Methodology



Source: Coffing & Hutchinson. (1974). p. 23

The functions performed by a needs analyst (NA) in each of the ten major steps in the NAM are as follows:

1.0 Preparation

In this step, the NA performs the functions that are necessary for getting ready to implement the Methodology. The NA learns how to implement the Methodology, identifies a list of the goals to be accomplished by implementing NAM, and identifies a contract decision maker (CDM).

2.0 Contract Negotiation

The NA negotiates with the CDM to produce a contract which may be formal or informal. The purpose of the contract is to specify goals and objectives, scope and length of the analysis, resource needs and allocations, etc. The CDM identifies the decision maker (DM) who need useful information for decision making.

3.0 Planning

The NA plans how the Methodology will be applied and constructs a Needs Analysis Resource Allocation Chart (NARAC). This chart provides a planning framework within which the NA allocates amounts of time for the completion of each remaining step (3.0 - 10.0).

4.0 Determination of Who-What-Whom Concerns

The NA asks the DM for the following three lists:

a. A list of individuals, groups or categories of persons (needers) whose needs are to be met.

b. A list of the types of needs which the DM is concerned about meeting.

c. A list of individuals, groups or categories of persons (definers) who can best define the listed needs of the listed needers.

The lists are then combined by the DM according to the DM's priorities for having information. The result is a prioritized list of phrases in the form, who needs what, as defined by whom. For example: "Students' needs for career education, as defined by the students themselves."

5.0 Defining

In this step, the needers' needs are specified. What is the operational definition of the needers' needs? What behaviors and/or status comprise the needers' needs? The specifics of the needs contribute the criteria by which need fulfillment must be measured, if it is to be measured.

Some definers' definitions of the needs may be available through analysis of their publications, if any. Other definers' definitions are obtained by interview or survey. The definitional problem is essentially one of obtaining an explicit description of what in the definers' imagination would be present or would be happening if the needers' needs were completely fulfilled.

When the definitions are obtained by interview or survey, a stimulus question appropriate to the DM's stated purpose is developed by the NA. This question asks each definer to visualize to himself/herself an ideal situation in which all the specific needs of the needers for the type of need under discussion are fully met. Visualizing this

situation, the definer tells or writes down everything he/she sees which indicate that the specific needs of the needers are being fully met.

The NA then breaks down the responses to the stimulus question into unitary response statements, which will then be compiled into a survey instrument. Each definer is asked to prioritize the list of need statements in the survey instrument.

6.0 Definition Reporting

The NA prepares and presents a report to the DM. The main part of the report is the results of the defining process, that is, the prioritized need items. The report also includes a statement of the procedures used and difficulties encountered in the defining process. The report is discussed fully with the DM, questions are answered, and the need components for measurement are decided.

7.0 Measuring

This step is a unique feature of NAM. Since the already fulfilled needs need not be met again, information users often want to know how well the defined needs are being met. However, measurement is not done automatically in NAM. It is done only if some resources are available for the measurement and the DM wants measurement done on some or all of the defined needs. When measurement is desired and resources are available, then a measurement plan is developed and implemented with the approval of the DM.

8.0 Measurement Reporting

When the measurement data are collected, the results are reported to the DM. The report also documents proeedures and any deviations from the measurement plan.

9.0 Evaluation of the Needs Analysis

The main eoncern of this step is to find out the extent to whieh the data about needs are aetually used by the DM in deeision making. To do this, the NA diseusses with the DM the deeisions made on the basis of the data and the likelihood of future deeisions being made on the basis of the needs analysis.

10.0 Revising

The NA revises one or more applieations of the Methodology in order to improve the utility of the needs analysis and to remain foeused on the most important data eoneerns of the DM. The NA will eommenee the proeess on his/her own or at the request of the DM or CDM.

Implementation of NAM to Open Colleges in Korea

A short form of the Coffing-Hutehinson Needs Analysis Methodology was implemented to six Korean open eolleges from October through Deeember, 1985. The eritical steps followed in earrying out the needs analysis are deseribed in the following pages. The numbers refer to the steps and sub-steps featured in the short form. Problems eneountered and related eomments are written next to the appropriate steps. Sinee the study is mostly eoneerned with identifying the needs of Korea's open college staffs for developing instruetional methods and media, the analysis was earried out through the step of definition reporting.

Preparation

1.1 - 1.2.2. The researcher did the following in preparation for the analysis in addition to attending a course on NAM offered by T. E. Hutchinson in the Fall semester, 1984:

- Read a number of papers and dissertations on NAM including:
  Needs Analysis Methodology: A Prescriptive Set of Rules and Procedures for Identifying, Defining, and Measuring Needs (Coffing & Hutchinson, 1974);
  Needs Analysis Methodology: Short Form, Draft I, 1977 (Maxner, 1977);
  Needs Analysis Methodology: The First Field Test of the Determining and Defining Procedures (Thomann, 1976);
  Identification of Client Demand for Public Services: Development of a Methodology (Coffing, 1973).
- Carried out a needs analysis to provide UWW staff, University of Massachusetts, Amherst, useful information about the needs of UWW staff regarding resources to provide services to UWW students.

1.3. The goals of the needs analysis are:

- To provide useful information to open college staff and Ministry of Education regarding the development of instructional methods and media for Korean open colleges;
- To examine the possibility of applying NAM in Korea.

1.4 - 1.5.3. Potential clients identified are:

- Open colleges in Korea;
- Nonformal Education Division, Ministry of Education, Korea;

- Korean Association for Higher Education;
- The NA.

The NA, the researcher, was determined to be the CDM for the following reasons:

- His experience of working for Nonformal Education Division, Ministry of Education, Korea, which is in charge of open colleges;
- His knowledge of the students and faculty of those colleges;
- His interest in the development of Korean open colleges.

Contract Negotiation

2.2. The CDM identified the following resources for completing this needs analysis:

- People: The staff of Korean open colleges presently working at those colleges;
- Time: Needs Analyst --- 35 hours
  DM (also CDM) --- 7 hours
  Definers --- 8 hours

2.3. The CDM is the only DM.

2.4 - 2.5. No additional contract negotiation was required since the NA has decided to serve as both the CDM and DM. Although no contract was written, the purpose of the needs analysis was to generate needs data for decisions to be made regarding the instructional methods and media for Korean open colleges. The duration of the analysis was three months.

Planning

3.2. According to Maxner's recommendation for allocating resources, specific amounts of time for the completion of each remaining step were allocated as in Table 22.

Table 22

Needs Analysis Resource Allocation Chart

Step	DM	NA	Definers
4.0 Determining W-W-W Concerns	3	10	
5.0 Defining	2	15	8
6.0 Definition Reporting	2	10	
Total	7	35	8

Note. Unit: Hour

3.6. To secure the cooperation of Definers, the NA wrote them a letter explaining the nature and purpose of the needs analysis, and the importance of their cooperation for the successful implementation of the project.

Determining Who-What-Whom Concerns

4.3.1. The needers, whose needs are to be met, are the staff of Korean open colleges.

4.3.2. The needs to be met are those for resources to develop instructional methods and media appropriate for open college students.

4.3.3. The definers, who can best define the needs of the needers, are presidents, professors, and administrative staff of Korean open colleges.

4.3.4. The needs statement is:

> "The needs of Korea's open college staffs for resources necessary to develop instructional methods and media appropriate for their students as defined by presidents, professors, and administrative staffs of Korean open colleges."

4.3.4.1. Thirty staff members, that is, five from each of the six open colleges in Korea, were selected as definers.

Defining

5.2.1. The DM would use data about the needs phrase to make decisions about the resources necessary for open colleges to develop appropriate instructional methods and media.

5.2.2. The hypothetical situation appropriate for stimulating greater involvement of the definers as recommended by the Methodology is as follows:

> "Imagine that your college is developing various instructional methods and media which are most appropriate for the students of your college and can meet their individual needs, and that in this situation your college staffs' needs for resources necessary for developing those instructional methods and media are being fulfilled. As you observe this situation in your mind, what are

all the things you see that indicate to you that your college staffs' needs for resources are being fully met?"

5.2.4. The NA developed a survey instrument, using the hypothetical situation above as a stimulus question, to get definitions of the needs of open college staff from the definers. The questionnaire was sent by mail to the definers with return envelopes.

Twenty-nine out of thirty definers returned the questionnaire.

5.2.5. - 5.2.5.1.4. All the responses from the definers were analyzed into unique statements and included in the second survey instrument, which is for prioritizing the need items on the list according to which are the most important components of the need. Effort was made to use the definer's own language in the survey instrument to avoid any possible bias.

As in the needs analysis study of the UWW staff, many needs statements appeared to overlap with each other. The researcher, according to T. E. Hutchinson's recommendation for the needs analysis study of the UWW staff, placed similar need components next to each other so that the definers could easily compare them for prioritization, and included special instruction on that in the survey instrument.

The survey instrument was sent to ninety staff members, that is, fifteen from each college, by mail for prioritization with return envelopes. The reason for increasing the number of definers for prioritization is to include as many staff members as possible, whose job is closely related to the development of instructional methods and media, and to get more relevant and useful information about the needs.

Survey instrument

"Imagine a situation in which your college staff's needs for resources, necessary for developing instructional methods and media appropriate for the students of your college, are fully met. Read each item in the list that follows. If the item is something that the open college staff need, place a checkmark in the space provided. Note that some items are similar in nature. You may check one or two or all of those items if that (those) is (are) something that the open college staff need.

After completing the above, go back over the list and circle the numbers of the ten most important need items."

_____ 1. Policy support for establishing cooperative relationship between college and industry

_____ 2. Cooperation between college and industry for technical advice and practical research of college professors

_____ 3. Establishment of an organization for college-industry cooperation

_____ 4. Information on world highest technology

_____ 5. Correspondence of college education to the need of the industry

_____ 6. Curriculum appropriate to current situation of society

_____ 7. Defining educational objectives of an open college in detail

_____ 8. Establishment of various courses of study

_____ 9. Experiment and practical training appropriate for current situation of society

_____ 10. Improvement of the level of education according to the acceleration of technological innovation

_____ 11. Encouragement of the participation of the people in the industrial sector in open college education

_____ 12. Assessment of needs of the industry through active industrial research

_____ 13. Utilizing an industry as a classroom

_____ 14. Mutual utilization of the facilities between college and industry

_____ 15. Interchange of instructional material and information with open colleges in foreign countries

_____ 16. Establishment of an organization in charge of interchange of instructional material and information among college, industry, and research organization

_____ 17. Collaborative research with other colleges

_____ 18. Technical support of the industry for an educational institution

_____ 19. Financial support of the industry for an educational institution

_____ 20. Cooperation of the people in the industry regarding development of instructional methods and media

_____ 21. Collaborative research with the industry

_____ 22. Advice and cooperation on college education from the industry

_____ 23. Institutionalization of industry participation in practical training of students

_____ 24. Active participation of college academic in technological development of the industry

_____ 25. Establishment of a professional graduate school connected with the industry

_____ 26. Encouraging employees to participate in continuing education by the industry

_____ 27. Help/cooperation from the industry for their employees to attend a college

_____ 28. Active public relations of an open college towards the industry

_____ 29. Encouraging the industry to commission an open college to train their employees

_____ 30. Sufficient equipment for laboratory experiment and practice

_____ 31. Support of maintenance and operating expenses of the equipment for experiment and practice

_____ 32. Sufficient number of laboratory assistants

_____ 33. Laboratory equipment for the research of professors

_____ 34. Development of the unit program

_____ 35. Development of educational programs for technician

_____ 36. Development of on-the-job training programs for students

_____ 37. Individualized modular instructional material

_____ 38. Assessing the scholastic ability of students

_____ 39. Educating students by group classified by the scholastic ability

_____ 40. Establishing a variety of individualized instructional program

_____ 41. Establishment of learning support center

_____ 42. Students' attitude of self-directed learning

_____ 43. Active cooperation of students

_____ 44. Encouraging students' motive of achievement

_____ 45. Free and wide student choice of subjects

_____ 46. Enhancing the reputation of an open college among the general public

_____ 47. Making all colleges and universities more open

_____ 48. Improvement and enlargement of existing open colleges

_____ 49. Establishing an open college suitable for the social context of the region

_____ 50. Operating an open college as a real open learning institution

_____ 51. Expansion of college library

_____ 52. Autonomy of a college in deciding admission quota, establishing a course of study, and awarding a degree

_____ 53. Feedback through assessing the needs of the industry and evaluation of individualized instruction

_____ 54. Support for employing air and correspondence education from related Ministries such as Ministry of Education, Ministry of Culture and Information, and Ministry of Communications

_____ 55. Computer system for collecting, analyzing, utilizing, and interchanging information rapidly and accurately

_____ 56. Computer system for developing and utilizing instructional materials

_____ 57. Computer system for utilizing and evaluating individualized instructional programs

_____ 58. Improving and diversifying research on college education

_____ 59. Recruiting academic staff with professional skills

_____ 60. Security of the status of professors

_____ 61. Staff for examining and conducting research on education

_____ 62. Sufficient time for research

_____ 63. Opportunity of site observation for professors

_____ 64. Opportunity of on-the-job training for professors

_____ 65. Opportunities for professors to study abroad on the open learning system

_____ 66. Exchange program of professors between national and private colleges

_____ 67. Foreign language training for professors

_____ 68. Periodical retraining on new instructional methods, media, and laboratory equipment

_____ 69. Efforts of professors to develop instructional methods and media

_____ 70. Initiation of related government officials to develop instructional methods and media

_____ 71. Research staff for developing instructional methods and media

_____ 72. Financial support for research on the development of instructional methods and media

_____ 73. Determination of a college to develop instructional methods and media

_____ 74. Recognition of the meaning of an open learning methods

_____ 75. Development of an evaluation method suitable for an open learning methods such as self-study, cooperative education, etc.

_____ 76. Professional staff for the development of audio-visual media

_____ 77. Establishment of audio-visual center

_____ 78. More audio-visual materials for instruction

_____ 79. Classroom equipped with audio and video cassette recorder, and overhead projector

_____ 80. Computerized education facilities such as computer terminal

_____ 81. Lending and supplying audio-visual materials which are not profitable under government support

"After completing the above, please go back over the list and circle the numbers of the ten most important need items."

5.2.6. The result were tabulated by scoring one point for every item checked and ten points for every item circled. Table 23 presents the result.

Table 23

Total Score

Item #	Score	Item #	Score	Item #	Score	Item #	Score
1	422	21	156	41	54	61	83
2	292	22	83	42	180	62	192
3	131	23	200	43	33	63	48
4	178	24	111	44	77	64	134
5	114	25	333	45	104	65	575
6	220	26	203	46	259	66	53
7	103	27	319	47	63	67	75
8	191	28	279	48	272	68	65
9	167	29	130	49	134	69	97
10	158	30	259	50	160	70	83
11	183	31	114	51	261	71	58
12	166	32	355	52	256	72	162
13	80	33	165	53	58	73	59
14	118	34	44	54	44	74	94
15	306	35	76	55	102	75	133
16	157	36	37	56	92	76	78
17	43	37	117	57	73	77	119
18	137	38	55	58	56	78	78
19	230	39	120	59	181	79	174
20	96	40	160	60	399	80	154
						81	75

Although the definers were instructed to circle the ten most important need items, many definers circled less than ten items and several definers circled more than ten items. T. E. Hutchinson (personal communication, January 14, 1986) suggested to score one hundred points divided by the number of items circled for the items circled by a definer who circled more than ten items, but, he said, it would not make much difference in the priority. The researcher found that it did not change the order of priority to score either ten points or one hundred points divided by the number of items circled. So the researcher, as the DM, decided to score ten points for every item circled for the convenience of calculation.

Definition Reporting

6.2. The NA took the top fourteen need components as the most important needs of the Korean open college staffs for developing instructional methods and media for Korean open colleges. Those need components are presented in Table 24.

Table 24

Need Components of Higher Priority

Priority	Weight	Item	
1	575	# 65	Opportunities for professors to study abroad on the open learning system
2	422	# 1	Policy support for establishing cooperative relationship between college and industry
3	399	# 60	Security of the status of professors
4	355	# 32	Sufficient number of laboratory assistants
5	333	# 25	Establishment of a professional graduate school connected with the industry
6	319	# 27	Help/cooperation from the industry for their employees to attend a college
7	306	# 15	Interchange of instructional material and information with open colleges in foreign countries
8	292	# 2	Cooperation between college and industry for technical advice and practical research of college professors
9	279	# 28	Active public relations of an open college towards the industry
10	272	# 48	Improvement and enlargement of existing open colleges
11	261	# 51	Expansion of college library
12	259	# 30	Sufficient equipment for laboratory experiment and practice
12	259	# 46	Enhancing the reputation of an open college among the general public
14	256	# 52	Autonomy of a college in deciding admission quota, establishing a course of study, and awarding a degree

6.3. The process used to obtain the definition of the needs can be summarized as follows: The open college staffs were provided with the stimulus question and their responses to that question were compiled into a survey instrument. The survey instrument was distributed and the results obtained from the survey provided the prioritized needs of the open college staffs.

6.4. The difficulties encountered in the Defining Process were: itemizing the responses of definers into single need components, especially those similar in nature; and scoring the items circled by a definer who circled more than ten items. The relevant comments to these problems were made next to the relevant steps.

Conclusion

This chapter identifies the fourteen most important need components the staff of Korean open colleges need to develop instructional methods and media appropriate for their students through the implementation of the short form of NAM. Several of the fourteen need components do not seem directly related to the development of instructional methods and media. However, these need components should be given due consideration by decision makers since these are the ones identified as most important by the definers whose job, as noted earlier, is closely related to the development of instructional methods and media.

Several important implications can be derived from the results of the analysis as to possible policy considerations for the development of open colleges in Korea, especially for the development of the instructional methods and media of those colleges.

First, more opportunities to conduct research on the open learning system in other countries should be provided for open college staffs, whether by sending some of them to other countries or establishing a channel for exchanging information with foreign open colleges. The former is certainly a way to introduce them first-hand to what others in the field are doing, although it is relatively expensive. Since educational technology is so foreign to most academics, a variety of efforts and training programs may be useful to introduce faculty adequately to issues, problems, and techniques involved. Furthermore, the personal contacts established may help them cope with the many unforeseen problems which doubtless lie ahead.

Second, the cooperative relationship between college and industry should be more strengthened through policy support, collaborative research, active public relations, establishment of a professional graduate school connected with the industry, etc. The expansion of the function of the existing college-industry cooperation committee would be a way to strengthen the relationship.

Third, the existing open colleges should be firmly established as institutions of technical and vocational education for working people by securing the status of the professors at those colleges, furnishing sufficient laboratory assistants and equipment for experimentation and practice, and by expanding the college library. Through these efforts, an open college can establish itself as an important provider of higher education for working people. Further expansion of the open college

system to other regions should be based on the firm establishment of the existing colleges as institutions for working people.

Finally, the open colleges should be given the autonomy to make decisions on all matters regarding admissions quotas, establishment of a course of study, and awarding a degree or certificate.

It might not be possible to implement all these suggestions in the near future. Several may need more careful consideration to be implemented. However, it should be possible to implement most of them in the foreseeable future. Since they are based on an assessment of the actual needs, the suggestions in the final analysis are vitally important to the development of Korean open colleges as open learning institutions in the true sense of the word.

C H A P T E R VIII

CONCLUSIONS AND RECOMMENDATIONS

This chapter weaves together the main themes and conclusions of the study, and suggests recommendations useful for policy makers who are concerned with the development of open colleges in Korea. The study specifically addresses the issue that if Korea's open colleges are to establish themselves as important providers of continuing higher education for working people, they should develop appropriate instructional methods and media which would enable students to study in their own way, at their own place, where and when they desire. The study places more emphasis on practical aspect of the development of instructional methods and media than to matters of instructional theory or even broader philosophical considerations.

Open learning is understood in this study more from a philosophical rather than an administrative perspective that describes, for instance, colleges with open administration policies. In this sense, its meaning is derived from efforts to expand the options of learners with respect to policies on admissions, selection of courses and learning goals, and time and place of study. Although there are criticisms and problems associated with it, open learning has contributed much to the democratization of higher education by increasing its access to previously excluded groups, mainly through innovations in various communications technologies. By employing new technologies to deliver

education, open learning institutions have overcome problems of distance and reach those unable to attend school regularly because of job or family responsibilities.

Modern technology offers many alternative ways to design instruction. This study focuses on the didactic potentials and limitations of major instructional methods and media either in current use or soon to be used in open learning. It was found that each has its strengths and weaknesses in delivering certain kinds of instruction to learners. The study also concludes that the choice of instructional methods and media by an institution does not depend solely on their inherent instructional capabilities. Such other factors as the role of faculty, the development level of the particular technology itself, and the socio-economic and political context into which it is introduced should be carefully considered in the selection of which instructional methods and media are appropriate to develop. This interplay of factors is amply demonstrated through the examination of the case studies presented in the study.

The Open University in the United Kingdom has developed a multi-media based instructional system to serve widely scattered students around the nation. Holyoke Community College in the U. S. A. has developed a strong cooperative education program to serve those nontraditional students who might not have been able to enroll in higher education without their co-op jobs. Through this program, HCC offers education which is practical in nature and relevant to community needs.

Open colleges were established in Korea to provide opportunities for technical and vocational higher education to working people, most of whom perceive distance and time as major barriers to participating in conventional education. However, as of this time, no innovative instructional methods have been developed by open colleges that serve to reduce long-standing barriers for working people to continue their education.

While Korea's open colleges are continuing some efforts to reach more working people, the limited efforts are not based on student and academic staff interests and needs. The current approach is not likely to result in a viable strategy for the further development of open colleges in Korea. A new approach and a major effort to help working people continue their education without being restricted by time and place of study is urgently needed today. This study concludes that the development of varied instructional methods and media is a necessary component of this new approach.

The survey of open college students found that most students were dissatisfied with the instructional methods of their college. The students preferred cooperative education as the most suitable instructional method for their education which, they indicated, should be more practical and relevant to the needs of society. In addition, most students believe the introduction of more open learning methods would make the instructional system more suitable for working people to continue education at an open college and make class attendance less burdensome. Taken as a whole, the findings tended to reinforce the

urgency for the development of more innovative and varied instructional methods and media in Korea's open colleges. The methods should be developed so as to enhance the practicality of their education and permit working people to continue their education at an open college more conveniently.

The study uses the Coffing/Hutchinson Needs Analysis Methodology to identify the fourteen most important open college staffs' need components for developing appropriate instructional methods and media. As the study's most important part, this assessment was specifically designed to provide useful information on the college staffs' needs for resources to develop instructional methods and media appropriate for their students. The needs assessment also suggested the following major policy considerations:

- More opportunities to research the open learning system in other countries should be provided for the open college staff;
- The cooperative relationship between college and industry should be strengthened;
- Existing open colleges should be augmented as institutions of technical and vocational higher education for working people before expansion of the system to other regions is considered; and
- The colleges should be given the autonomy to make decisions on all internal matters.

Based on the literature review, case studies, the results of the student survey, and the needs analysis of the staff, the following

recommendations are made. They are designed to be useful for further development of Korea's open colleges in regard to their role as important providers of higher education for working people.

1. Open colleges need to secure appropriate political support from the Government and the legislature. Such political support is essential for the successful establishment of the colleges as a low-cost alternative to higher education for disadvantages students, especially in a country where resources for education are very limited. Support from the Government would also be helpful in obtaining necessary cooperation from the industrial sector. This cooperation would help open college staff to develop innovative instructional methods and media, such as cooperative education or practical training for students.

Support from Government, on the one hand, does not always work in a positive way. As noted earlier, a number of value issues are raised in the study that concern the expansion and development of open learning, especially distance learning methods. Political support can work positively only if the Government encourages the colleges to take their own initiative. Government support, in other words, should be offered in the spirit of a political and attitudinal climate which is responsive to the interests of students.

2. If open colleges are to serve more disadvantaged students without a high school education, then they need to eliminate formal educational requirements. In addition, they should upgrade student support services by making them more easily available through supplemental instruction, counselling, etc. Without this measure, these

students may become frustrated and leave the college even though they are capable and motivated to pursue higher education.

3. The target population of Korean open colleges, working people, has many barriers to continuing their education. Among the barriers, one of the most serious seems to be economic difficulty. Although the tuition costs of open colleges are relatively lower than those of conventional colleges and universities, they are still very expensive for many working people of Korea. If the colleges are to serve more economically disadvantaged students, the tuition costs should be lowered. The British Open University, which has been able to keep its student costs low through economies of scale by employing varied instructional methods and media, might be a good example for Korea's open colleges to follow.

4. Open colleges should be given the autonomy to decide such internally important matters as establishing a course of study, selecting students, and awarding academic credits and degrees. If the colleges are in the position of having to obtain approval for each and every innovation and new instructional method and medium they wish to develop, this condition would be detrimental to their ability and willingness to respond creatively to the needs of their clientele.

5. All higher education faculty have a need for further development. This conclusion is especially true of the faculty of Korea's open colleges. Many of the tasks which they have to perform by virtue of being in an open college are quite different from those they may be used to in a traditional junior college. Although the faculty

participated in an in-service training program on open learning systems, many indicated their interest in more research and information on open learning systems in other countries in order to develop instructional methods and media appropriate for their college. Therefore, more programs for faculty development, including overseas training opportunities, would seem to be in order.

6. The training of technical workers for growing industries requires close cooperation between the colleges and the industrial sector. Such cooperation is also essential for the establishment and expansion of cooperative education and the practical training of students. While political support from the Government would be helpful for establishing such cooperative relationships between college and industry, of greater importance is the colleges' own efforts to identify the industrial needs and to offer education that is responsive to those needs.

7. There is growing consensus among adult educators that adult interest in discipline-based curricula is declining in favor of professional and vocational training in response to the acceleration of technical changes occurring in every aspect of human life. Even the Open University of Great Britain, which since its inception has been concerned mostly with degree-oriented and general education curricula, has announced its intention to concentrate more on short vocational courses through an institution of lifelong learning. Therefore, efforts to make various continuing education programs available at open colleges to meet Korean society's changing educational needs would seem to be

called for. However, this does not mean that general education may be disregarded in those colleges. Those fundamentals essential to the well being of cultivated man cannot be ignored even in professional education. These essential ideas and intellectual skills must then be brought together in systematic and intelligible fashion in order that students will be motivated to comprehend and respond maturely to the world around them.

As a provider of technical and vocational higher education for working people, Korea's open college system seems to have been implemented successfully. What is now needed to further its process is the development of instructional methods and media which can reach more people, adapt to the new needs of the working population, and respond to the personal requirements and capabilities of its students. The needs components and other findings addressed by the study would hopefully facilitate this development process and contribute much to the further development of the open learning system in Korea.

APPENDIX

APPENDIX A

Pre-test Questionnaire for the Students

(Your name is not required)

1. Sex?

   a. Male

   b. Female

2. Age?

   a. 20 or less

   b. 21 - 25

   c. 26 - 30

   d. 31 - 35

   e. 36 - 40

   f. Over 40

3. Marital status?

   a. Married

   b. Unmarried

4. Your present average monthly income?

   a. 100,000 Won or less

   b. 100,001 - 200,000 Won

   c. 200,001 - 300,000 Won

   d. 300,001 - 400,000 Won

   e. 400,001 - 500,000 Won

   f. 500,001 Won or more

5. What is your occupation? _____

6. How many hours do you work in a week? _____

7. How many hours do you study at home in a week? _____

8. Do you go to school from your home or from your work place? _____

9. How long does it take to go to your college? _____

10. What is the main reason why you go on to college? _____

11. What do want to get out of your college? _____

12. What is the main reason why you attend an open college instead of a traditional college? _____

13. Are you satisfied with the education you receive from your college?

_____

14. If not, what are the reasons? _____

15. How many credits are you currently taking? _____

16. How many times do you go to school in a week? _____

17. Is it burdensome to you to go to school? _____

18. If so, how could it be less burdensome? _____

19. Among the followings, what do you have at home or are easily available to you?

    a. radio

    b. T.V.

    c. Audio cassette recorder

    d. Video cassette recorder

    e. Personal computer

    f. Computer terminal

20. Have you used it (them) for your study? _____

21. If yes, what have you used? _____

22. Are you satisfied with the instructional methods of your college?

_____

23. If not, what are the reasons? _____

24. Do you think the instructional system of your college is appropriate for the working people to continue their education?

_____

25. If no, how do you think it could be more appropriate for the working people? _____

26. Do you want your college to develop various kinds of instructional methods which satisfy the needs of working people? _____

27. If yes, what kinds of instructional methods do you want your college to develop? _____

28. Do you get enough cooperation/help from your company or work place?

_____

29. If not, what kinds of cooperation/help do you want to get from your company or work place? _____

30. What are the major difficulties in continuing your education at an open college? _____

31. How do you think it could become more convenient for you to continue education at an open college? _____

32. What further comments do you have? _____

_____

_____

APPENDIX B

Group Interview Guideline

1. What is the main reason why you go on to college?
2. What do you want to get out of it?
3. What is the main reason why you attend an open college instead of a traditional college?
4. Are you satisfied with the education you receive from your college?
5. If not, what are the reasons?
6. Is it burdensome to you to go to school?
7. If so, how could it be less burdensome?
8. Are you satisfied with the instructional methods of your college?
9. If not, what are the reasons?
10. Do you think the instructional system of your college is appropriate for the working people to continue their education?
11. If not, how do you think it could be more appropriate for them?
12. Do you want your college to develop various kinds of instructional methods which satisfy the needs of working people?
13. If yes, what kinds of instructional methods do you want your college to develop?
14. Do you get enough cooperation/help from your company or work place?
15. If not, what kinds of cooperation/help do you want to get from your company or work place?
16. What are the major difficulties in continuing your education at an open college?
17. How do you think it could become more convenient for you to continue education at an open college?
18. What further comments do you have?

APPENDIX C

Questionnaire for the Students

(Your name is not required)

1. Sex? a. Male b. Female

2. Marital status? a. Married b. Unmarried

3. What kind of job do you have?

   a. Office work b. Non-office work c. None

4. Your present monthly income?

   a. None b. 100,000 Won or less c. 100,001-200,000

   d. 200,001-300,000 e. 300,001-400,000 f. 400,001 or more

5. Among the followings, what do you have at home or are easily available to you?

   a. Radio b. Television c. Audio cassette player

   d. Video cassette player e. Personal computer

   f. Computer terminal g. None

6. Among the things you checked above, what have you used for your study?

   a. Radio b. Television c. Audio cassette player

   d. Video cassette player e. Personal computer

   f. Computer terminal g. None

7. What is the main reason why you go on to college?

   a. To acquire new knowledge b. To acquire job-related skills

   c. To get a degree d. To get a (new) job

   e. For self-development f. Other (specify) _____

8. What is the main reason why you attend an open college instead of a traditional college?

   a. Being able to study while working

   b. Easy admission of transfer c. Inexpensive tuition

   d. Lack of preparation to attend a traditional college

   e. Too old to attend a traditional college

   f. Other (specify) _____

9. How many credits are you currently taking?

   a. Less than 6 b. 6-9 credits c. 10-12 credits

   d. 13-15 credits e. More than 15 credits

10. How many times do you go to school to attend a class in a week?

   a. Once b. Twice c. 3 times

   d. 4 times e. 5 times f. 6 times

11. Is it burdensome to you to attend classes?

   a. Very burdensome b. Burdensome c. In between

   d. Not burdensome e. Not at all burdensome

12. If burdensome, what can make it less burdensome?

   a. Introduction of more open learning methods other than classroom teaching

   b. More help/cooperation from work place for attending classes

   c. Provision of convenient transportation

   d. More weekend classes e. Other (specify) _____

13. Are you satisfied with the education you are receiving from your college?

    a. Very satisfied b. Satisfied

    c. Both satisfied and dissatisfied

    d. Dissatisfied e. Very dissatisfied

14. If dissatisfied, what is the main reason?

    a. Too much classroom teaching b. Low quality of instructors

    c. Lack of practical knowledge or skill in the curriculum

    d. Low level of education e. Other (specify) _____

15. What kind of education do you want to receive from your college?

    a. Improved level of education b. More general education

    c. More vocational education

    d. More education for further study

    e. Other (specify) _____

16. Are you satisfied with the instructional methods of your college?

    a. Very satisfied b. Satisfied

    c. Both satisfied and dissatisfied

    d. Dissatisfied e. Very dissatisfied

17. If dissatisfied, which of the following instructional method do you want your college to develop?

    a. Cooperative education b. Correspondence education

    c. Correspondence education with radio or television broadcast

    d. Correspondence education with audio or video cassettes

    e. Computerized education e. Other (specify) _____

18. Do you think the instructional system of your college is suitable for working people to continue their education?

    a. Very suitable b. Suitable c. In between

    d. Not suitable e. Not at all suitable

19. If not suitable, what can make it more suitable for them to continue their education?

    a. Introduction of more open learning methods

    b. Giving credits to prior learning

    c. Introduction of cooperative education

    d. More weekend classes e. Other (specify) _____

20. Is it difficult for you to continue education at an open college?

    a. Very difficult b. Difficult c. In between

    d. Not difficult e. Not at all difficult

21. If difficult, what is the main reason?

    a. Attendance to classroom teaching

    b. Shortage of time to study c. Economic difficulty

    d. Lack of basic knowledge e. Other (specify) _____

22. If difficult, how can it be less difficult?

    a. Introduction of more open learning methods

    b. More help/cooperation from work place

    c. Financial aids d. Free tuition

    e. Provision of convenient transportation

    f. Other (specify) _____

23. What further comments do you have?

    _____

Thank you.

APPENDIX D

Needs Analysis Methodology

Short Form, Draft I, 1977

The following set of procedures is designed to provide a decision maker with useful information about needs. This short form version of the Coffing/Hutchinson Needs Analysis Methodology is applicable for needs analysis problems which can be utilized for complex needs analysis situations. In order to accomplish the stated purposes of providing useful information about needs, a person should do, in turn, each of the following steps:

STEPS

1.0 PREPARATION

1.1 The person reads the sub-steps of the short form of the Needs Analysis Methodology.

1.2 The person learns how to implement this methodology.

1.2.1 The person reads available documentation of the short form of the methodology including both its rationale and its procedures.

1.2.2 The person participates in a course on Needs Analysis Methodology, if available.

1.3 The Needs Analyst, "NA", writes a list of the goals she/he wants to accomplish by implementing Needs Analysis Methodology.

1.4 The NA identifies potential clients for her/his applying Needs Analysis Methodology where the list of clients is consistent with the goals of the NA. The NA may also be a client.

1.5 The NA contacts potential clients for the purpose of determining what interest they may have in negotiating for an application of the Needs Analysis Methodology.

1.5.1 To each potential client she/he contacts, the NA briefly explains the purpose and nature of the short form of the Needs Analysis Methodology.

1.5.2 The NA determines if the potential client is interested and if an application appears appropriate and desirable.

1.5.3 When a client is found, that person is the Contract Decision Maker, proceed to step 2.0.

2.0 CONTRACT NEGOTIATIONS

2.1 The NA arranges with the Contract Decision Maker, "CDM", to begin negotiations.

2.1.1 The NA and CDM determine in general, what kind of things the contract must or might contain, whether it is to be formal or informal, its scope, its possible length, and other broad aspects of the possible contract.

2.2 The CDM identifies preliminarily what resources can be made available for applying the short form of Needs Analysis Methodology.

2.2.1 The NA explains to the CDM that implementing the methodology will require peoples' time and expenses--not only the time of the NA but also of the CDM, the Decision-makers for whom the data are to be provided, the Definers, and so on; furthermore, the NA explains that Needs Analysis work must be done within the actual resources that are available.

2.3 The CDM identifies the Decision-makers for whom needs data are desired. There must be at least 30 hours of NA time per Decision-maker.

2.3.1 The NA explains to the CDM that Decision-makers have to be willing to participate in any Needs Analysis work done for their use.

2.4 The CDM allocates resources to those Decision-makers for whom needs data are to be provided.

2.4.1 The NA asks the CDM to consider the availability of the following kinds of resources:

Decision-makers time, Definers time, CDM's time, volunteer time, clerical time, salary funds, consultant funds, supply and expense funds, office space, clerical equipment.

2.5 The NA and the CDM develop a contract document or informal agreement to complete the needs analysis. It is recommended that an informal agreement be in writing in the form of a memorandum.

3.0 PLANNING

3.1 The NA plans how the methodology will be applied in accordance with the contract.

3.2 The NA constructs a Needs Analysis Resource Allocation Chart (NARAC). This chart (see figure I) provides a planning framework within which the NA allocates specific amounts of time for the completion of each remaining step (3.0 - 10.0) of the short form of the methodology for a given DM (see figure II). These percentages provide a reasonably accurate time allocation for completing each step.

3.3 The NA secures the cooperation of the Decision-makers and explains the nature and purpose of Needs Analysis Methodology and of the contract.

3.4 The NA plans the beginning and ending dates for steps 4.0 - 10.0 for each Decision-maker.

3.5 The NA goes to step 4.0.

3.6 The NA secures the cooperation of Definers and Needers.

3.7 The NA contacts each Definer specified by the DM and informs them about the nature of the Needs Analysis and about the specified needs phrases for which the Definer has been named by the DM.

3.7.1 The NA finds out from the Definer, the first and last dates of the Definer's availability within the contract period.

3.8 The NA reports the status of plans to the CDM, pointing out the beginning and ending dates of each of the remaining steps of the methodology.

3.9 The NA goes to step 5.2.4.

FIGURE I

NEEDS ANALYSIS RESOURCE ALLOCATION CHART

(NARAC)

Steps of Needs Analysis Methodology	NA Time	DM Time	2nd Priority DM Time
3.0 PLANNING			
4.0 DETERMINING W-W-W CONCERNS			
5.0 DEFINING			
6.0 DEFINITION REPORTING			
7.0 MEASURING			
8.0 MEASUREMENT REPORTING			
9.0 EVALUATION OF NEEDS ANALYSIS			
10.0 REVISING			

FIGURE II

SOME PERCENTAGE DISTRIBUTIONS

OF RESOURCES AMONG STEPS 3.0 - 10.0

OF THE SHORT FORM OF THE

METHODOLOGY FOR A GIVEN DM

STEP		NA TIME	DM TIME
3.0	PLANNING	8%	5%
4.0	DETERMINING W-W-W CONCERNS	5%	10%
5.0	DEFINING	20%	23%
6.0	DEFINITION REPORTING	5%	10%
7.0	MEASURING	40%	30%
8.0	MEASUREMENT REPORTING	10%	10%
9.0	EVALUATION OF NEEDS ANALYSIS	2%	2%
10.0	REVISING	10%	10%
	TOTALS	100%	100%

4.0 DETERMINING WHO-WHAT-WHOM CONCERNS

4.1 Determine from the NARAC how much time is available for this step. All of step 4.0 must be accomplished within this amount of time.

4.2 Determine the Decision-makers concerns about who needs what according to whom.

4.3.1 NA has the Decision-maker name: (the Who)

- the one person or group (a "Needer") whose needs are most important to her/him. e.g. citizens.

4.3.2 NA has the Decision-maker name: (the What)

- the type of need that most concerns her/him with respect to that needer. (What kind of need is most important). e.g. educational programs.

4.3.3 NA has the Decision-maker name: (the Whom)

- for the person or group and the need, who can best define the specifics of the need. e.g. citizens.

4.3.4.1 The NA informs the DM that she/he must limit the number of possible Definers to a maximum of 12. If the DM requires more than 12 Definers, the NA suggests the use of the long form of the methodology, which provides sampling procedures.

4.3.5 If resources allow, ask other people who are concerned with the same issues or problems, to do 4.3.1 - 4.3.4. Show these responses to the DM and ask if she/he would like to change her/his needs statement.

5.0 DEFINING

5.1 NA determines from the RAC how much time is available for this step. All of step 5.0 must be accomplished within this amount of time.

5.2 The NA obtains an operationalized definition of the Needer's need according to the Definer.

5.2.1 The NA asks the DM to say how the DM would use data about the needs phrase.

5.2.2 The NA develops a hypothetical situation appropriate to the DM's stated purpose in manner similar to the following: Imagine (hypothetical situation), and in that situation imagine that (name of Needer's) needs for (type of needs being defined) are fully met. Observe this situation in your mind. What are all the things you see in the situation that indicate to you that (name of Needer's) needs for (type of need being defined) are fully met?

Note: Here is an example of a stimulus where the DM's purpose is to use needs data in planning an individualized program for a child. The "what" in this situation is the child's need for "emotional support" and the Definer is the child's parent. "Imagine that our school is providing individualized instruction for your child and in this instruction all of your child's needs for emotional support are being fulfilled. As you observe this situation in

your mind, what are all the things you see that indicate to you that your child's needs for emotional support are being met?"

5.2.3 The NA goes to step 3.6.

5.2.4 NA asks the Definer(s) to list the things which indicate to her/him that the need is being fully met.

5.2.5 Have the Definer(s) prioritize the components.

5.2.5.1 If there is only one definer, NA asks the Definer to prioritize the items on the list according to which are the most important components to the need.

5.2.5.1.1 When more than one Definer is involved, the NA analyzes the total number of responses into unique statements and produces a survey instrument in the form below:

_____ 1. (Item)

_____ 2. (Item)

_____ 3. (Item)

_____ 4. (Item)

5.2.5.1.2 Each Definer is asked to prioritize the list. (Survey instrument)

5.2.5.1.3 NA asks each Definer to read the open ended stimulus question and then place a check mark (V) next to each item on the survey instrument that she/he feels is a part of who's need for what. (Refer to W-W-W phrase).

5.2.5.1.4 The Definer(s) are now asked to go back over the items they checked and circle the 10 most important items.

5.2.6 The NA tabulates the results and records the top ten prioritized items by utilizing the following procedure:

(a) Score one point for every item checked.

(b) Score ten points for every item circled.

(c) Put the items into rank order based on the weight obtained from adding the scores given as a result of (a) and (b) above.

Example:

(W-W-W phrase):

Students needs for emotional support according to students.

Survey Instrument: (2 Definers)

OVV 1. Teachers respect students.

VV 2. Students enjoy coming to school.

V 3. Students and teachers cooperate.

OOVV 4. Teachers are flexible with regard to how individual students learn.

_____ 5. Students attend assembles with enthusiasm.

_____ N.

Tabulation of Results

Item #4 22 points

#1 12 points

#2 2 points

#3 1 point

#5 0 point

6.0 DEFINITION REPORTING

6.1 The NA determines from the RAC the time available for this step. All of step 6.0 must be accomplished within this amount of time.

6.2 The NA compiles the results, (prioritized items), of the Defining Process for the particular who-what-whom phrase.

6.3 The NA writes a statement of the procedures used to obtain the definition which is being reported.

6.4 The NA describes and difficulties encountered in the Defining Process.

6.5 The NA writes and delivers the report to the DM.

6.6 The NA answers any questions the DM asks.

6.7 The NA asks the DM to decide which need components should be measured to determine the degree to which those need components are met or unmet.

7.0 MEASURING

7.1 Determine from the RAC the time available for this step. All of step 7.0 must be accomplished within this amount of resources.

7.2 The NA determines which need components the DM wants to have data about.

7.3 The NA designs an ideal measurement plan for the chosen component. (The procedures of the plan are called the observational technique.)

7.3.1 The NA conceptualizes and records how to directly observe the actual number of occurances of the operationalized need component, under natural conditions and unobtrusively.

DIRECTLY means: observe in such a way that the observer can actually see or hear the occurances of the component.

NATURAL means: that no conditions are imposed by the measurement technique that elicit the kind of behavior to be observed, the only stimuli present are those normally present in the situation being observed.

UNOBTRUSIVELY means: in the case of observation of behavior, the persons being observed are not aware that they are being observed and can never become aware that the observation has or is being made.

7.3.2 The NA designs an observational technique that meets the requirements of directness, naturalness, and unobtrusiveness, even though in many cases, the resources are not sufficient to carry out this plan.

7.4 The NA designs a practical measurement plan.

7.4.1 The NA alters the ideal measurement plan in ways that will permit measurement to be carried out within the available resources.

7.4.2 If necessary, the NA plans an altered degree of obtrusiveness that will have a short term and minimal effect on the operationalized need component.

7.4.3 If necessary, the NA alters the degree of naturalness by planning a stimulus situation as nearly natural as possible.

7.4.4 If necessary, the NA alters the degree of directness by planning an indirect measurement that is as close as possible to the direct measurement.

7.5 The NA determines the populations (e.g. people, times, and places) for which the observation is to be carried out.

7.6 The NA determines whether sampling is required to reduce the cost of observation. If sampling is required, the NA designs a complete plan for sampling from the population of observations.

7.7 The NA designs a recording device which includes the following information:

-- name of the DM

-- name of the Need Phrase(s)

-- name of the Need Component(s)

-- name of the Definer(s)

-- the category of Needers who are being observed

-- the time of observation, year, month, day, time

-- the names of Needers being observed or some other way of recording essential information regarding Needers, e.g. if recording according to street address, note that

-- for each Needer, the actual observations made

7.8 The NA tests the proposed measurement plan for completeness by field testing the observational technique and the recording device.

7.8.1 The NA tries out the measurement plan on a group or individual similar to (but not the same as) the actual group to be measured.

7.8.2 The NA documents all problems encountered with the measurement plan and the recording device and redesigns when appropriate.

7.9 The NA reports the measurement plan to the DM and includes estimates of costs, time of observers, cost of equipment and supplies.

7.9.1 The NA documents the proposed measurement plan as contrasted with the ideal measurement plan pointing out all threats to validity and documenting all tests made.

7.9.2 The NA asks the DM if the data produced by the measurement plan would really be used by her/him in the decision making process.

7.10 The NA implements the measurement plan.

7.10.1 The NA draws the sample (if appropriate) and plans the exact time at which each member of the sample will be observed.

7.11 The NA carries out the actual observations.

7.11.1 The NA records all observations on the recording device.

8.0 MEASUREMENT REPORTING

8.1 Determine from the RAC how much time is available for this step. All of step 8.0 must be accomplished within this amount of time.

8.2 The NA reports the results of measuring to the DM.

8.2.1 The NA plans to present the report orally, except she/he will provide, in writing, the cover page, the numerical presentation of data, and graphic or tabular presentation of data.

8.2.2 The NA writes out any deviations from the measurement plan that occurred.

8.3 The NA writes the report which should note the following: date of the report, the need phrase, the need component, name of observational technique and dates of observation.

8.3.1 The NA presents the report to DM and answers any questions the DM may have.

9.0 EVALUATION OF NEEDS ANALYSIS

9.1 Determine from RAC how much time is available for this step. All of step 9.0 must be accomplished within this amount of time.

9.2 The NA evaluates the extent to which the data are actually used by the DM in her/his decision making.

9.2.1 The NA discusses with the DM the decisions that were made on the basis of the data and the likelihood of future decisions being made on the basis of the needs analysis.

10.0 REVISING

10.1 Determine from the RAC how much time is available for this step. All of step 10.0 must be accomplished within this amount of time.

10.2 The NA revises one or more applications or the methodology. Depending on the circumstances, the NA will commence the process on her/his own or at the request of a DM or CDM.

GLOSSARY

CONTRACT DECISION MAKER -- "CDM" -- the potential client or the agent with whom the Needs Analyst negotiates. The CDM is expected to be a person who controls the resources that can be made available for needs analysis.

DECISION MAKER -- "DM" -- individuals or groups for whose use, data are desired.

DEFINER -- person or group who can best define the specifics of the identified need of the needer.

NEED -- a concept of some desired set of conditions; a concept of what should be.

NEEDER -- person or group whose needs are important to the DM.

NEEDS ANALYST -- "NA" -- the person who is carrying out the Needs Analysis Methodology.

RESOURCES -- the CDM's time, other peoples time, the NA's time, expense funds, funds for an application of the methodology, materials.

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